

TECHNICAL FISHERY REPORT 94-08



Alaska Department of Fish and Game
Commercial Fisheries Management
and Development Division
P.O. Box 25526
Juneau, Alaska 99802-5526

June 1994

Salmon Catch and Escapement Statistics for Copper River, Bering River, and Prince William Sound, 1990

by

Steven D. Moffitt

Cecil Rich

and

John A. Wilcock

The Technical Fishery Report Series was established in 1987, replacing the Technical Data Report Series. The scope of this new series has been broadened to include reports that may contain data analysis, although data oriented reports lacking substantial analysis will continue to be included. The new series maintains an emphasis on timely reporting of recently gathered information, and this may sometimes require use of data subject to minor future adjustments. Reports published in this series are generally interim, annual, or iterative rather than final reports summarizing a completed study or project. They are technically oriented and intended for use primarily by fishery professionals and technically oriented fishing industry representatives. Publications in this series have received several editorial reviews and at least one *blind* peer review refereed by the division's editor and have been determined to be consistent with the division's publication policies and standards.

SALMON CATCH AND ESCAPEMENT STATISTICS FOR COPPER RIVER,
BERING RIVER, AND PRINCE WILLIAM SOUND, 1990

By
Steven D. Moffitt
Cecil Rich
and
John A. Wilcock

Technical Fishery Report No. 94-08

Alaska Department of Fish and Game
Commercial Fisheries Management
and Development Division
P.O. Box 25526
Juneau, Alaska 99802-5526

June 1994

AUTHORS

Steven D. Moffitt is a Region II Assistant Area Research Biologist with the Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division, P.O. Box 669, Cordova, Alaska 99574-0669.

Cecil Rich is a Region II Assistant Area Research Biologist with the Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division, P.O. Box 669, Cordova, Alaska 99574-0669.

John A. Wilcock is a Region II Prince William Sound and Copper River Research Biologist with the Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division, P.O. Box 669, Cordova, Alaska 99574-0669.

ACKNOWLEDGMENTS

The authors would like to thank all the supervisors, managers, tender captains, dock foremen, floor bosses, office personnel, and individuals in the salmon processing industry who have provided assistance to our catch sampling program in the port of Cordova. The ADF&G catch and escapement sampling crew members were Scott Jordan, Diane Phipps, Joyce Restad, Brad Scotten, and Jane Stehly. Cordova Area management biologists James Brady, Ellen Simpson, Evelyn Biggs, Slim Morstad, and their data entry staff, Leah Gilman and Jill Phillips, provided the basic catch and escapement data for this report. Ken Roberson supervised the collection of samples from the subsistence and personal use fisheries on the upper Copper River. Chinook salmon sport catches and escapements were sampled by Anchorage office Sport Fish Division staff under the direction of Craig Whitmore. The Collins family of Long Lake volunteered their time and effort to install, maintain, and operate a weir at Long Lake. The authors would also like to acknowledge Sam Sharr, Research Project Leader for the Prince William Sound area.

TABLE OF CONTENTS

	<u>Page</u>
LIST OF TABLES	v
LIST OF FIGURES	vii
LIST OF APPENDICES	ix
ABSTRACT	xv
INTRODUCTION	1
Description of Area	1
Copper/Bering River	1
Prince William Sound	2
METHODS	3
Enumeration of Catch	3
Enumeration of Hatchery Returns	4
Enumeration of Escapement	4
Sampling Procedures	5
Commercial Fishery Sampling	5
Subsistence and Personal Use Fishery Sampling	6
Escapement Sampling	7
Copper/Bering River Escapement Sampling	7
Prince William Sound Escapement Sampling	8
RESULTS AND DISCUSSION	8
Copper/Bering Rivers	9
Sockeye Salmon	9
Catch	9
Escapement	10
Chinook Salmon	11
Catch	11
Escapement	11
Coho Salmon	11
Catch	11
Escapement	12

TABLE OF CONTENTS (Continued)

	<u>Page</u>
Prince William Sound	12
Sockeye Salmon	12
Catch	12
Escapement	13
Coho Salmon	13
Pink Salmon	14
Chum Salmon	14
LITERATURE CITED	16
TABLES	18
FIGURES	43
APPENDIX	79

LIST OF TABLES

<u>Table</u>	<u>Page</u>
1. Salmon harvest and indexed escapement by species and fishery from the combined upper Copper River and Copper/Bering River areas and Prince William Sound areas, 1990	18
2. Commercial salmon harvest by species, gear type, and district from the Copper/Bering River and Prince William Sound areas, 1990	19
3. Subsistence and personal use harvest by species, fishery, and gear type for the Copper/Bering River and Prince William Sound areas, 1990	20
4. Sport fishery harvest and effort by location and species in the upper Copper River and in the combined Copper River delta, Bering River, and Prince William Sound areas, 1990	21
5. Salmon escapements and escapement indices by species and district in the Copper/Bering River and Prince William Sound areas, 1990	22
6. Copper/Bering River management area sockeye salmon commercial common property catch and effort by district and fishing period from final fish ticket summaries, 1990	23
7. Estimated age composition of Copper/Bering River area sockeye salmon in commercial common property drift gillnet catches and upper Copper River subsistence and personal use fish wheel and dip net catches, 1990	24
8. Estimated age composition of sockeye salmon in escapements to the Copper and Bering River systems, 1990	25
9. Copper/Bering River area chinook salmon commercial common property catch and effort by district and fishing period from final fish ticket summaries, 1990	26
10. Estimated age composition of Copper River chinook salmon in commercial common property drift gillnet catches, rod and reel sport catches, and escapements, 1990	27
11. Copper/Bering River area coho salmon commercial common property catch and effort by district and fishing period from final fish ticket summaries, 1990	28
12. Estimated age composition of Copper/Bering River area coho salmon in commercial common property drift gillnet catches, 1990	29

LIST OF TABLES (Continued)

<u>Table</u>	<u>Page</u>
13. Prince William Sound sockeye salmon weekly commercial common property catch and effort by district and gear type from final fish ticket summaries, 1990	30
14. Estimated age composition of sockeye salmon in Prince William Sound commercial common property drift gillnet catch, 1990	32
15. Estimated age composition of sockeye salmon in sampled escapements to Prince William Sound, 1990	33
16. Prince William Sound coho salmon weekly commercial common property catch and effort by district and gear type from fish ticket summaries, 1990	34
17. Prince William Sound pink salmon weekly commercial common property catch and effort by district and gear type from final fish ticket summaries, 1990	36
18. Estimated hatchery contributions of pink salmon to the commercial common property harvests, hatchery cost recovery harvests, hatchery brood stock escapements, and pink salmon total return to Prince William Sound, 1990	38
19. Prince William Sound chum salmon weekly commercial common property catch and effort by district and gear type from fish ticket summaries, 1990	39
20. Estimated age composition of chum salmon in Prince William Sound commercial common property gillnet and purse seine catches, 1990	41
21. Estimated hatchery contributions of chum salmon to the commercial common property harvests, hatchery cost recovery harvests, hatchery brood stock escapements, and chum salmon total run to Prince William Sound, 1990	42

LIST OF FIGURES

<u>Figure</u>	<u>Page</u>
1. Prince William Sound area showing commercial fishing districts, hatcheries, and weir locations	43
2. The Copper Bering/River area and the major coastal spawning areas which contribute to the commercial fisheries	44
3. The location of the personal use fishery near Chitna and the subsistence fishery which extends from Chitna to Slana along the upper Copper River	45
4. Sockeye salmon catches from the commercial common property drift gillnet fisheries of the Copper and Bering River Districts by period, 1990	46
5. Temporally stratified age composition of sockeye salmon from the commercial common property drift gillnet fisheries in the Copper and Bering River Districts, 1990	47
6. Daily sockeye salmon catch in the combined subsistence and personal use fisheries of the upper Copper River, 1990	48
7. Temporally stratified age composition of the sockeye salmon catch from the combined subsistence and personal use fisheries on the upper Copper River, 1990	49
8. Sockeye salmon aerial escapement indices for the Copper River delta and Bering River drainage by survey date, 1990	50
9. Estimated escapement of sockeye salmon to the upper Copper River, Copper River delta, and Bering River, and the estimated age composition of the escapements, 1990	51
10. Daily counts of sockeye salmon escapements past the Miles Lake sonar and their estimated age composition from fish sampled in the personal use and subsistence fisheries near Chitina, 1990	52
11. Chinook salmon catches from the commercial common property drift gillnet fishery of the Copper River District by period, 1990	53
12. Temporally stratified age composition of chinook salmon from the commercial common property drift gillnet fishery in the Copper River District, 1990	54

LIST OF FIGURES (Continued)

<u>Figure</u>	<u>Page</u>
13. Coho salmon catches from the commercial common property drift gillnet fisheries of the Copper and Bering River Districts by period, 1990	55
14. Temporally stratified age composition of coho salmon from the commercial common property drift gillnet fisheries in the Copper and Bering River Districts, 1990	56
15. Weekly sockeye salmon catches from the major commercial common property purse seine, drift gillnet, and set gillnet fisheries in Prince William Sound, 1990	57
16. Daily sockeye escapement through the weirs on the outlets of Coghill, Eshamy, and Jackpot Lakes, Prince William Sound, 1990	60
17. Temporally stratified age composition of sockeye salmon through the weirs on the outlets of Coghill, Eshamy, and Jackpot Lakes, Prince William Sound, 1990	61
18. Weekly coho salmon commercial common property catches from the major purse seine, drift gillnet, and set gillnet fisheries in Prince William Sound, 1990	62
19. Pink salmon commercial common property gillnet and purse seine harvest and hatchery cost recovery harvest for Prince William Sound by district, 1990	65
20. Weekly pink salmon catches from the major commercial common property purse seine, drift gillnet, and set gillnet fisheries in Prince William Sound, 1990	66
21. Percentage of the total wild pink salmon aerial escapement estimate by district in Prince William Sound, 1990	70
22. Weekly aerial escapement estimates of wild pink salmon by district, Prince William Sound, 1990	71
23. Weekly chum salmon catches from the major commercial common property purse seine, drift gillnet, and set gillnet fisheries in Prince William Sound, 1990	74
24. Temporally stratified age composition of chum salmon from five of the most important commercial common property purse seine and gillnet districts, Prince William Sound, 1990	77

LIST OF APPENDICES

	<u>Page</u>
APPENDIX A: AGE AND SEX DATA FOR COMMERCIAL COMMON PROPERTY SALMON CATCHES FROM THE COPPER AND BERING RIVERS (DISTRICTS 200 AND 212).	
A.1 - Temporally stratified age and sex composition of the sockeye salmon harvested in the Copper River District commercial common property drift gillnet fishery, 1990	81
A.2 - Estimated age and sex composition of sockeye salmon harvested in the Bering River District commercial common property drift gillnet fishery, 1990	84
A.3 - Temporally stratified age and sex composition of chinook salmon harvested in the Copper River District commercial common property drift gillnet fishery, 1990	85
A.4 - Temporally stratified age and sex composition of coho salmon harvested in the Copper River District commercial common property drift gillnet fishery, 1990	87
A.5 - Temporally stratified age and sex composition of coho salmon harvested in the Bering River District commercial common property drift gillnet fishery, 1990	88
APPENDIX B: SUBSISTENCE, PERSONAL USE, AND SPORT FISH SALMON CATCHES FROM THE UPPER COPPER RIVER.	
B.1 - Daily catches of sockeye, chinook, and coho salmon in the subsistence and personal use fisheries on the upper Copper River, 1990	89
B.2 - Temporally stratified age and sex composition of sockeye salmon harvested in upper Copper River personal use and subsistence fisheries, 1990	92
B.3 - Estimated age and sex composition of chinook salmon sport fishing harvests at two locations in the upper Copper River area, 1990	95

LIST OF APPENDICES (Continued)

Page

APPENDIX C: SALMON ESCAPEMENTS TO COASTAL STREAMS OF THE COPPER RIVER DELTA AND THE BERING RIVER.

C.1	- Aerial escapement indices for sockeye salmon returning to the Copper River delta and the Bering River drainage by date and location, 1990	96
C.2	- Aerial escapement indices for coho salmon returning to the Copper River delta and Bering River by date and location, 1990	101
C.3	- Estimated age and sex composition of sockeye salmon in the total indexed escapements to the Copper River delta and Bering River drainage, 1990	104
C.4	- Estimated age and sex composition of sockeye salmon escapements to the Copper River delta, 1990	105
C.5	- Estimated age and sex composition of sockeye salmon escapements to the Bering River drainage, 1990	112

APPENDIX D: SALMON ESCAPEMENTS TO THE UPPER COPPER RIVER.

D.1	- Daily Copper River salmon escapement estimates at the Miles Lake sonar project, 1990	113
D.2	- Sockeye salmon escapement through the Long Lake weir, 1990	115
D.3	- Aerial escapement estimates of sockeye salmon returning to the upper Copper River drainage by date and location, 1990	116
D.4	- Aerial escapement estimates of chinook salmon returning to the upper Copper River drainage by date and location, 1990	119
D.5	- Temporally stratified age and sex composition of sockeye salmon in the upper Copper River escapement past the Miles Lake sonar facility estimated from fish sampled in the personal use and subsistence fisheries near Chitina, 1990	121

LIST OF APPENDICES (Continued)

	<u>Page</u>
D.6 - Estimated age and sex composition of chinook salmon carcasses sampled at five upper Copper River locations, 1990	122
APPENDIX E: AGE AND SEX DATA FOR COMMERCIAL COMMON PROPERTY SALMON CATCHES FROM PRINCE WILLIAM SOUND (DISTRICTS 221-229).	
E.1 - Estimated age and sex composition of sockeye salmon harvested in the Eshamy District commercial common property drift and set gillnet fisheries, 1990	124
E.2 - Temporally stratified age and sex composition of chum salmon harvested in the Eastern District commercial common property purse seine fishery, 1990	125
E.3 - Temporally stratified age and sex composition of chum salmon harvested in the Northern District commercial common property purse seine fishery, 1990	126
E.4 - Temporally stratified age and sex composition of chum salmon harvested in the Coghill District commercial common property purse seine and gillnet fisheries, 1990	127
E.5 - Temporally stratified age and sex composition of chum salmon harvested in the Eshamy District commercial common property gillnet fisheries, 1990	129
E.6 - Temporally stratified age and sex composition of chum salmon harvested in the Southwestern District commercial common property purse seine fishery, 1990	131

LIST OF APPENDICES (Continued)

Page

APPENDIX F: SALMON ESCAPEMENTS TO COASTAL STREAMS IN PRINCE WILLIAM SOUND.

F.1	- Daily escapement counts of sockeye, chinook, pink, and chum salmon through the Coghill River weir, 1990	132
F.2	- Daily escapement counts of sockeye, pink, and chum salmon through the weir at the head of Eshamy Lagoon, 1990	133
F.3	- Daily escapement counts of sockeye, chinook, and chum salmon through the Jackpot River weir, 1990	135
F.4	- Sockeye salmon aerial escapement counts from selected systems in Prince William Sound, 1990	136
F.5	- Weekly aerial estimates of the escapement of live pink salmon to selected streams in Prince William Sound, 1990	137
F.6	- Weekly aerial estimates of the escapement of live chum salmon by statistical area, Prince William Sound, 1990	143
F.7	- Temporally stratified age and sex composition of the sockeye salmon escapement past the Coghill River weir, 1990	144
F.8	- Temporally stratified age and sex composition of the sockeye salmon escapement past the weir at the head of Eshamy Lagoon, 1990	145
F.9	- Temporally stratified age and sex composition of the sockeye salmon escapement through the Jackpot River weir, 1990	146
F.10	- Estimated age and sex composition of selected sockeye salmon systems in Prince William Sound, 1990	147
F.11	- Daily brood stock counts of chum salmon at Wally Noerenberg Hatchery, 1990	148
F.12	- Estimated age and sex composition of chinook salmon in the Wally Noerenberg Hatchery brood stock, 1990	149

LIST OF APPENDICES (Continued)

	<u>Page</u>
F.13 - Temporally stratified age and sex composition of chum salmon brood stock at Wally Noerenberg Hatchery, 1990	150
APPENDIX G: MEAN LENGTH BY SEX AND AGE OF SALMON IN THE COMMERCIAL COMMON PROPERTY CATCHES AND ESCAPEMENTS OF THE COPPER/BERING RIVERS AND PRINCE WILLIAM SOUND.	
G.1 - Mean length by sex and age of sockeye salmon from the commercial common property drift gillnet catches in the Copper River District, 1990	151
G.2 - Mean length by sex and age of sockeye salmon from the commercial common property drift gillnet catches in the Bering River District, 1990	153
G.3 - Mean length by sex and age of chinook salmon from the commercial common property drift gillnet catches in the Copper River District, 1990	154
G.4 - Mean length by sex and age of coho salmon from the commercial common property drift gillnet catches in the Copper River District, 1990	155
G.5 - Mean length by sex and age of coho salmon from the commercial common property drift gillnet catches in the Bering River District, 1990	156
G.6 - Mean length by sex and age of sockeye salmon in the personal use and subsistence, dip net and fish wheel catches from the upper Copper River near Chitina, 1990	157
G.7 - Mean length by sex and age of chinook salmon from sport catches in the upper Copper River, 1990	158
G.8 - Mean length by sex and age of sockeye salmon escapements to the Copper River delta, 1990	159
G.9 - Mean length by sex and age of sockeye salmon escapements to the Bering River, 1990	162

LIST OF APPENDICES (Continued)

		<u>Page</u>
G.10	- Mean length by sex and age of chinook salmon carcass samples from five upper Copper River locations, 1990	163
G.11	- Mean length (mm) of pink salmon from sampled commercial common property and hatchery cost recovery catches in Prince William Sound by district, 1990	165
G.12	- Mean length by sex and age of chum salmon from commercial common property purse seine catches in the Eastern District, 1990	166
G.13	- Mean length by sex and age of chum salmon from commercial common property purse seine and drift gillnet catches in the Coghill District, 1990	167
G.14	- Mean length by sex and age of chum salmon from commercial common property gillnet catches in the Eshamy District, 1990	168
G.15	- Mean length by sex and age of sockeye salmon in sampled escapements to Prince William Sound, 1990	169
G.16	- Mean length by sex and age of chinook salmon from the Wally Noerenberg Hatchery brood stock, 1990	171
G.17	- Mean length by sex and age of chum salmon from the Wally Noerenberg Hatchery brood stock, 1990	172
APPENDIX H: AVERAGE WEIGHTS OF SALMON IN THE COPPER/BERING RIVERS AND PRINCE WILLIAM SOUND COMMERCIAL COMMON PROPERTY CATCH AND HATCHERY COST RECOVERY HARVESTS		
H.1	- Average salmon weights from the commercial gillnet and purse seine fisheries in the Copper/Bering and Prince William Sound areas, 1990	173
H.2	- Average lengths and weights for pink salmon from commercial common property and hatchery cost recovery catches, Prince William Sound, 1990	174

ABSTRACT

The 1990 catch and escapement statistics for Pacific salmon *Oncorhynchus* species in the Copper River, Bering River, and Prince William Sound areas are summarized as a reference for management of the salmon resource. Catch information was compiled from commercial fish tickets, subsistence and personal use fish permits, and a postal survey of sport fishermen. Escapement data were taken from aerial and ground surveys, side-scan sonar counts, weir counts, and brood stock counts. Stratified systematic samples of age, sex, and size were collected from salmon catches and escapements using standard sampling techniques for each select species, gear type, and fishing district.

Commercial, subsistence, personal use, and sport fishermen harvested 47,148,855 salmon in the Copper River, Bering River, and Prince William Sound areas in 1990. Pink salmon *Oncorhynchus gorbuscha* were predominant in the combined total commercial catch from Prince William Sound, more than 75% of which were hatchery fish. The escapement index for all species and areas was 2,403,258 salmon. Temporal variations in age composition of the catch were observed for sockeye salmon *O. nerka* and chinook salmon *O. tshawytscha* in the Copper River District, and chum salmon *O. keta* in the Eastern, Northern, Coghill, Coghill, and Eshamy Districts.

KEY WORDS: Salmon, *Oncorhynchus*, Copper River, Bering River, Prince William Sound, catch, escapement, age, length, sex, weight

INTRODUCTION

Estimated 1990 Pacific salmon *Oncorhynchus* catches and escapements from the Prince William Sound management area were summarized and integrated with age, sex, and size composition data to provide the basic biological information necessary for effective management of the resource. This information can be used to predict run strength based on parent and brood year returns, evaluate hatchery contributions, and assess harvest policies designed to effect maximum sustained yield.

Harvest and escapement abundance data, as well as age, sex, and size information are collected annually in monitoring programs maintained by the Alaska Department of Fish and Game (ADF&G). Detailed harvest and escapement information for the Prince William Sound management area is presented by Gilman et al. (1990) and Brady et al. (1991). These estimates are combined with age, sex, and size data obtained in 1990 and summarized in this report by species for each sampled fishery. This report adds to the database established by Sharr and Peckham (1988), Sharr et al. (1988), Crawford and Simpson (1989), Crawford and Simpson (1990), and Wilcock (1993). Detailed information for each fishery is presented in the Appendix.

Description of Area

The Prince William Sound management area is divided into 11 fishing districts that encompass coastal waters and associated inland watersheds of the Gulf of Alaska between Cape Suckling and Cape Fairfield (Figure 1). The Copper River District (212) and Bering River District (200) to the east of Hook Point, Hinchinbrook Island, have historically been treated as a discrete unit termed the Copper/Bering River area (Figure 2). Prince William Sound (PWS) proper lies to the west of Hook Point and includes the Eastern (221), Northern (222), Coghill (223), Northwestern (224), Eshamy (225), Southwestern (226), Montague (227), and Southeastern (228) Districts. The Unakwik District, previously designated as District 222-50, was redesignated as District 229 beginning in 1989.

Copper/Bering River Area

Drift gillnets are the only legal commercial gear type in the Copper and Bering River Districts. Sockeye *Oncorhynchus nerka*, coho *O. kisutch*, and chinook salmon *O. tshawytscha* are the predominant species in the Copper River District harvest. In the Bering River District, sockeye and coho salmon dominate the catch. Pink salmon *O. gorbuscha* and chum salmon *O. keta* catches are generally quite small and considered incidental in both districts.

A subsistence fish wheel fishery on the upper Copper River extends from Chitina to Slana (Figure 3). In addition, a personal use dip net and fish wheel fishery is restricted to a few miles of the river near Chitina. These fisheries harvest a large portion of the sockeye and chinook salmon migrating through the area. Subsistence fishing is also permitted in the coastal commercial fishing areas simultaneously with commercial openings, but harvests of all species are generally low.

Sport fishermen in the Copper/Bering River area target primarily chinook and sockeye salmon in the upper Copper River drainage, and coho and sockeye salmon in a few coastal streams.

Hatchery runs of sockeye salmon to the Copper River originate from the Gulkana I and II streamside incubation facilities located on the Gulkana River in the upper Copper River drainage. These facilities are operated by ADF&G, Division of Fisheries Rehabilitation, Enhancement and Development (FRED) and funded by the Prince William Sound Aquaculture Corporation (PWSAC).

Wild sockeye salmon in the Copper and Bering River Districts spawn in tributaries and lakes of the upper Copper River, small coastal streams in the Copper River delta, and tributaries of the Bering River (ADF&G 1962). Coho salmon spawn primarily in coastal streams, whereas chinook salmon spawn almost exclusively in the upper Copper River (ADF&G 1964; Thompson 1964).

Prince William Sound Area

Wild and hatchery salmon are harvested in several commercial fisheries throughout PWS. Several terms have been used to distinguish between the individual elements of the commercial harvest:

Commercial Common Property Catch - all salmon harvested by the traditional competitive commercial fisheries (gillnet and purse seine) as opposed to other commercial harvests resulting from hatchery cost recovery or other noncompetitive harvests.

Hatchery Cost Recovery Catch or Hatchery Sales Harvest - all salmon caught and sold by private non-profit hatcheries to pay for their operating expenses. This catch is taken in *special harvest areas* (SHA) adjacent to the hatchery by fishermen under contract to the facility operators.

Total Commercial Catch - all salmon that are caught and sold commercially.

Purse seines are generally permitted in commercial common property fisheries in all districts of PWS, except the Eshamy District (225) where only set and drift gillnet gear are permitted. Drift gillnets are also permitted in the Coghill (223) and the Unakwik (229) Districts. Several small areas in the Eshamy and Southwestern Districts were closed to fishing in 1990 because of the potential for contamination of catches by oil from the Exxon Valdez spill.

Purse seine fisheries have historically harvested most of the pink and chum salmon total commercial catch, as well as significant incidental catches of sockeye salmon. Gillnet fisheries, having much smaller total harvests than purse seine fisheries, traditionally target sockeye salmon. In recent years large catches of pink and chum salmon have coincided with increased hatchery production of these species. Historically, harvests of chinook and coho salmon in PWS have been incidental, but fishermen have recently begun to target coho salmon returns to the Wally Noerenberg Hatchery on Esther Island. Initial returns of coho salmon to this facility began in 1987 from releases the previous year. Southwestern purse seine fishermen

also intercept many coho salmon returning to the Wally Noerenberg Hatchery. Substantial coho catches also occur in the Valdez Arm and Port Valdez areas from Solomon Gulch Hatchery releases.

Subsistence harvests of salmon in PWS, mostly sockeye salmon, are extremely small. Pink and coho salmon are the predominant species harvested in PWS sport fisheries. Although the harvest occurs primarily in marine waters, considerable sport fishing is also directed toward sockeye salmon in Coghill River and Eshamy Lagoon.

Five hatcheries are currently operating in PWS: the Solomon Gulch, Cannery Creek, Wally Noerenberg, Main Bay, and Armin F. Koernig Hatcheries (Figure 1). The Solomon Gulch, Wally Noerenberg, and Armin F. Koernig facilities are owned and operated by private, nonprofit organizations and primarily produce pink and chum salmon. The Cannery Creek facility, which primarily produces pink salmon, is owned by the State of Alaska and has been operated under contract by the PWSAC since July of 1988. PWSAC also assumed operation of the Main Bay Hatchery in 1990. The Main Bay Hatchery is raising full-term, age-1 (i.e., reared in the hatchery over winter) sockeye salmon smolts. This facility originally produced chum salmon. The last chum salmon smolt were released in 1987, and some adults from this release will continue to return through 1992.

Wild pink and chum salmon spawn in many small coastal streams on the mainland and islands throughout PWS. The largest sockeye salmon escapements occur in Coghill Lake and Eshamy Lake. Other sockeye spawning areas include Cowpen, Miners, and Jackpot Lakes.

Harvest patterns for PWS in 1990 were closer to traditional fishing patterns after widespread closures to prevent oil contamination in 1989 following the Exxon Valdez oil spill (Brady et al. 1991). Closures to commercial fishing in a few small areas in 1990 had little impact on the harvest (Brady et al. 1991).

METHODS

Enumeration of Catch

Commercial salmon catches and fishing effort by fishing period and district or subdistrict were tabulated (Gilman et al. 1990) from *fish tickets*, i.e., sales receipts supplied by fishermen and processors. Processors often estimated the number of fish caught in landings by dividing landing weight by an estimated mean weight of that species. Because there is variation associated with estimates of mean weight, estimates of numbers caught may not be precise. The estimated mean weight and corresponding variance were not reported on fish tickets; therefore, the estimated numbers caught were assumed to represent the actual catch.

Subsistence and personal use catches recorded on returned fishery permits as of June 1991 were summed to provide total estimates. The catch figures are preliminary and may be lower than final published figures because all permits were not returned.

All sport fishery catches were estimated from postal surveys. Estimates were checked and validated with creel census data from selected fisheries (Mills 1991).

Enumeration of Hatchery Runs

Hatchery fish were caught in commercial fisheries concurrently with wild fish. Estimated hatchery contributions of pink salmon to total runs in 1990 were derived from coded wire tag recapture data (Geiger 1990). Hatchery fish were harvested in hatchery cost recovery fisheries and enumerated from fish tickets. All fish harvested in the hatchery cost recovery fisheries were assumed to be hatchery fish because the number of wild fish was unknown. Brood stock fish were enumerated in annual summary reports for each facility and summarized by Brady et al. (1991). A small number of carcasses from the brood stock were commercially sold in 1990 and were also summarized from fish tickets.

Enumeration of Escapements

Salmon stocks of the Copper/Bering River and PWS areas for which escapement data were available were grouped into runs according to major spawning areas. In the Copper/Bering River area, stocks were grouped into two runs: (1) the delta/Bering run, which includes all stocks of sockeye and coho salmon that spawn in coastal lakes and streams of the Copper River delta and Bering River watersheds; and (2) the upriver run, which includes all stocks of sockeye and chinook salmon that spawn in the Copper River watershed upstream of Miles Lake.

Estimates of sockeye and coho salmon escapements to coastal Copper River delta and Bering River tributaries were based on peak aerial survey counts of selected spawning areas. Aerial survey results represent indices of the relative abundance of escapements between stocks and years; however, they were used as estimates of total escapement in the absence of more precise data.

The upriver escapement of sockeye salmon in the Copper River was estimated using side-scanning sonar located at the outlet of Miles Lake (Figure 2). The escapement to Long Lake in the Chitina River drainage was counted through a weir on the lake outlet and was also included in the Miles Lake sonar count. The relative contributions of selected stocks to the total upper Copper River escapement were indexed by periodic aerial surveys.

For PWS, pink and chum salmon in 215 index streams were enumerated from weekly aerial surveys. Sockeye escapements to Coghill, Eshamy, and Jackpot Lakes were enumerated with weirs, and escapements to other selected systems were based on peak aerial survey counts.

Sampling Procedures

Catches and escapements were sampled to determine their age, sex, length, and weight. One scale was collected from each sampled sockeye and chum salmon, and three scales were collected from each sampled chinook and coho salmon. Pink salmon were not sampled for age data. Scales were taken from the left side two rows above the lateral line in an area transected by a diagonal line from the posterior base of the dorsal fin to the anterior base of the anal fin (INPFC 1963). Scales were mounted on gum cards and impressions were made in cellulose acetate (Clutter and Whitesel 1956). Scale growth patterns were examined to determine the age of each fish sampled. Whenever marine growth zones on scales were resorbed, marine age was determined using length frequency analysis (Tesch 1970). Length in millimeters was measured from the middle of the eye to the fork of the tail. Sex was determined by morphological characteristics, or when possible, by gonadal inspection.

Commercial Fishery Sampling

Age and sex composition of the season catch for each combination of species, gear, and fishing district were estimated with stratified systematic sampling programs described by Cochran (1977). Based on temporal distribution of past catches, contiguous fishing periods were combined to form sampling strata that would provide anticipated catches of similar magnitudes for all strata. The number of strata were based on temporal changes in age composition in previous years. Catches with no valid historical estimates of age and sex composition were divided into three or four strata to expose moderate temporal changes. Whenever possible, sampling occurred on a single day near the temporal midpoint of each stratum. For the Copper River District, fish in each sample were selected systematically from processors without regard to tender vessel or subdistrict of capture because Sharr (1983) found no differences in age composition among 1982 tender loads from subdistricts within District 212.

Sample size goals for each commercial catch stratum were 650 sockeye salmon from the Copper/Bering River area, 610 sockeye salmon from PWS, and 675 chinook salmon, 600 coho salmon, and 400 chum salmon per stratum from both the Copper/Bering River area and PWS. These goals were originally selected so that sufficient numbers of ageable scales would be collected to simultaneously estimate the proportion of each major age class in the catch within $\pm 5\%$ of the true proportion 90% of the time based on the normal approximation of a binomial proportion (Goodman 1965; Cochran 1977). However, Thompson's (1987) work on the "worst case" parameter value for the multinomial distribution suggests that these goals may actually result in simultaneously estimating the true percentage of each age group within $\pm 5\%$ over 95% of the time.

Age composition and the associated variance were estimated by procedures outlined in Cochran (1977) for stratified sampling as follows:

$$C_{ij} = C_r P_{ij} \quad ; \quad (1)$$

$$V[C_{ij}] = (C_t)^2 \frac{P_{ij}(1-P_{ij})}{N_t - 1} ; \quad (2)$$

$$C_j = \sum_{t=1}^T C_{tj} ; \quad (3)$$

$$V[C_j] = \sum_{t=1}^T V[C_{tj}] ; \quad (4)$$

where:

- C_t = the number of fish caught during stratum t ,
- P_{tj} = the fraction of the sample taken during stratum t that is age j ,
- N_t = the sample size during stratum t ,
- C_{tj} = the estimated number of fish of age j caught during stratum t ,
- T = the number of strata, and
- C_j = the estimate of the number of fish of age j caught during the season.

A correction factor for finite populations was not included in the calculations for variability because sample sizes were generally small relative to catches.

Subsistence and Personal Use Fishery Sampling

A stratified systematic sampling program was established for collecting sockeye salmon age, sex, and length samples from the upper Copper River subsistence and personal use fisheries. Sample stratification was based on commercial catch projections by fishing period and migratory timing data for upriver stocks (Merritt and Roberson 1983), but some inseason modifications occurred due to logistical constraints. Fish wheels and dip nets were sampled disproportionately during the season, but because gear differences and temporal differences could not be distinguished, catch samples from these gear types were pooled.

The same formulae used for estimating numbers of fish by age in commercial catches were used to estimate subsistence and personal use catches by age. Age, sex, and size composition of chinook and coho salmon from upriver fisheries were not estimated because of the small harvests.

Escapement Sampling

Sockeye salmon were sampled for age, sex, and length from escapements to the Copper River delta/Bering River coastal drainages, as well as from escapements to the Coghill, Eshamy, Jackpot, Robe, and Miners Lakes and Billys Hole in PWS. Sample collection methods varied by sample location. For locations where sampling was temporally stratified, the same formulae were used to estimate the escapement age composition as were used for the commercial catch, but escapement abundance was substituted for catch.

Copper/Bering River Escapement Sampling

Neither comprehensive enumeration studies nor detailed stratified sampling have been feasible for all coastal salmon streams of the Copper River delta and Bering River watersheds. Consequently, aerial surveys were used to estimate escapements to these areas. Simple systematic sampling described sex and age and the associated variance as follows:

$$E_j = A_m Q_j ; \quad (5)$$

$$V[E_j] = (A_m)^2 \frac{Q_j(1 - Q_j)}{N - 1} , \quad (6)$$

where:

- E_j = the season escapement of fish of age j ,
- A_m = the peak number counted on the spawning grounds during aerial surveys,
- Q_j = the estimate of the portion of the escapement of age j pooled over one or two sampling trips to the spawning grounds, and
- N = the number of fish sampled in all sampling trips to the spawning grounds.

Because total escapement abundance to these areas was not available, peak aerial spawning ground counts were multiplied by age proportions to approximate numbers of fish in each age class.

Sockeye salmon scale samples from the Copper River subsistence and personal use fisheries were believed to also represent the age, sex, and size composition of upriver escapements because (1) these fisheries occur downstream of most major spawning tributaries of the system, and (2) the gear types used are believed to be relatively free from size selectivity. Age and sex composition estimates from the catch strata were applied directly to the sonar counts from Miles Lake. Temporal stratification of the sonar-estimated escapement was simplified to two strata, and the passage dates were lagged to account for fish

travel time between Miles Lake and Chitina. Mean travel times in days were approximated from a linear regression of travel rate versus date calculated from mark-recapture data (Merritt and Roberson 1983).

Prince William Sound Escapement Sampling

Stratified systematic sampling and weir counts were used to estimate the age, sex, and size composition of sockeye salmon escapements to Coghill, Eshamy, and Jackpot Lakes. Simple systematic sampling and peak aerial survey counts were used to estimate the age, sex, and size composition of Robe Lake, Miners Lake, and Billys Hole. With the exception of the drift gillnet fisheries in the Esther Subdistrict of the Coghill District and in the Eshamy District, chum salmon harvested in PWS are taken primarily with purse seines. Because purse seines are believed to be relatively non-selective for size and age, commercial catch samples were assumed to represent age, sex, and size composition of escapements. Scale samples from chinook and chum salmon in the Wally Noerenberg Hatchery brood stock were collected by PWSAC and evaluated by ADF&G personnel. These samples provided an estimate of the age, sex, and size composition of chinook and chum salmon escapement in the Coghill District.

RESULTS AND DISCUSSION

The total run of all species of salmon to the Copper/Bering River area and PWS in 1990 was estimated to be 49,552,113 fish (Table 1), of which 89.9% (44,533,068) represented the pink salmon commercial harvest from PWS. The next largest component was commercially harvested chum salmon in PWS at 1.9% (959,838 fish), followed by sockeye salmon from the Copper/Bering River area at 1.7% (853,404 fish). Commercial catches exceeded all other harvest types for all species in all areas, except for the sport harvest of 415 chinook salmon in PWS which were less than the 418 caught by sport gear (Table 1). The subsistence/personal use harvest of sockeye salmon from the upper Copper River, 94,209 fish, exceeded harvests in other areas by this user group, yet composed only 9.9% of the total catch of sockeye salmon in the Copper/Bering River area and only 0.2% of the total run of all species to all areas. The sport harvest of pink salmon in PWS totaled 49,146 fish. This harvest was 55.0% of the sport harvest of all species from the PWS and Copper/Bering River areas but <0.1% of the PWS pink salmon return.

Commercial harvests by gear type for both the Copper/Bering River area and PWS are summarized in Table 2. Purse seine catches of 32,964,133 pink salmon in PWS commercial common property fisheries predominated the harvests of this species. The largest catches of chum salmon, 566,004 fish, were harvested by PWS drift gillnet fishermen. Drift gillnet fishermen in the Copper/Bering River area caught most of the commercial harvest of the three remaining salmon species: 853,110 sockeye, 21,716 chinook, and 289,749 coho salmon.

The personal use dip net catch of 63,057 sockeye salmon combined with the subsistence fish wheel catch of 27,331 sockeye salmon from the upper Copper River accounted for 95.9% of the subsistence/personal use harvest of this species and 90.8% of all species from all areas (Table 3).

Pink salmon caught in marine waters near Valdez by sport fishermen totaled 46,730 fish and composed 95.1% of the sport harvest for this species from all areas (Table 4). Coho salmon sport catches totaled 26,639 fish, of which 18,630 were taken in the vicinity of Valdez.

Peak aerial survey counts of pink salmon escapements in PWS (Table 5) totaled 1,325,852 fish in 1990, and the largest portions were observed in the Eastern (443,660 fish) and Southeastern (304,090 fish) Districts. Chum salmon peak counts of 115,100 fish in the Eastern District and 112,480 fish in the Northern District accounted for 76.1% the total escapement of this species in PWS. Sonar counts obtained from the Miles Lake facility totaled 581,859 fish; although species composition is not estimated for the sonar counts, the counts are assumed to be entirely sockeye salmon because they are highly dominant numerically. Aerial survey estimates of chinook salmon from the upper Copper River area totaled 4,208 fish. Although aerial survey counts of upper Copper River coho, pink, and chum salmon were not reported, aerial observations indicated escapements for these species were small.

Appendices A and B present age and sex composition by species for all sampled strata of the Copper/Bering River area commercial, subsistence, personal use, and sport catches, as well as daily catches for upriver subsistence and personal use catches. Aerial survey counts, daily Miles Lake sonar and Long Lake weir counts, as well as age and sex composition of escapements by location, are presented in Appendices C and D. Appendix E contains age and sex composition of PWS commercial harvests for each sampled district and time stratum. Aerial escapement estimates, daily weir counts, daily brood stock counts, and age and sex composition of PWS escapements are presented in Appendix F. Mean length by age and sex for all fish sampled can be found in Appendix G and, average weights of commercially caught fish are in Appendix H.

Copper/Bering Rivers

The commercial, subsistence, personal use, and sport fisheries in the Copper River District (212) and the Bering River District (200) share geographic proximity, occur simultaneously, and are all directed at stocks of sockeye, coho, and chinook salmon returning to the Copper/Bering River area.

Sockeye Salmon

Catch. In the Copper River District, 844,778 sockeye salmon were commercially harvested in 1990 (Table 6). Sockeye catches peaked during the third fishery opening on 21 and 22 May at 81,316 fish and again during the fifth opening on 28 and 29 May at 97,206 fish. Catches dropped sharply after the 11 and 12 June opening and declined steadily throughout the remainder of the season (Figure 4).

Age composition of the total commercial common property catch for all strata sampled was 53.5% age 1.3, 16.2% age 0.3, 14.2% age 2.3, 12.5% age 1.2, and 3.6% other ages (Table 7). The percentage of age-1.3 fish increased from low values of 42.9% and 40.9% in mid-May to a peak of 65.8% in late June and then decreased in July (Figure 5; Appendix A.1). Age-0.3 fish declined from a high of 34.6% in mid-May

to 16.6% in late May and declined steadily thereafter to a low of 7.2% in mid-July. The percentage of age-2.3 fish peaked in mid-May at 28.7% and in late May at 26.4% and then declined to a low of 2.3% in late June. Conversely, fish aged 1.2 composed only 1.0% of the catch in mid-May but increased steadily to a high of 28.9% in mid-July.

The Bering River District sockeye fishery was opened on 19 June, 1 month later than the Copper River District (Table 6). As in most recent years, fishing effort was concentrated over a relatively short period, and substantial catches were reported for only three fishery openings (Figure 4). Total sockeye salmon harvest for the district was 8,332 fish including small incidental catches during the directed coho salmon fishery. The sampled catch was composed of 44.5% age-1.2, 41.5% age-1.3, and 9.5% age-0.3 fish (Table 7; Appendix A.2).

The subsistence and personal use fisheries on the upper Copper River began on 1 June. A total of 93,740 sockeye salmon were harvested (Appendix B.1); peak daily catches occurred on weekends in June, mid-July, and early August (Figure 6). Of the total catch, 29.9% were taken with fish wheels and 70.1% with dip nets. Fish aged 0.3 (12.7%) and 1.3 (37.2%) were lower in relative abundance than in the Copper River commercial catch (Table 7), whereas age-1.2 fish (23.5%) composed a much larger portion than in the commercial catch. Age-2.3 fish (15.9%) occurred at about the same proportion as in the commercial catch. The contribution of age-0.3 fish declined from 46.3% in early June to 1.4% by early August, whereas the contribution of fish aged 1.2 increased from 8.8% to 48.2% over the same interval (Appendix B.2; Figure 7). The percentage of age-1.3 fish increased from a low of 20.0% in early June to a peak of 55.4% in late July.

Of the 4,346 sockeye salmon harvested by sport fishermen in the upper Copper River, 76.8% were caught in the Gulkana and Klutina River drainages (Table 4). The 1990 sport harvest of sockeye salmon in coastal areas of the Copper River District was included in catches reported for PWS. Observations of local area biologists indicated that several hundred fish were probably caught in a few easily accessible coastal streams.

Escapement. Aerial surveys indicated 74,445 sockeye salmon escaped into spawning areas of the Copper River delta and 19,741 sockeye salmon escaped into the Bering River drainage (Table 5; Appendix C.1). These data are not estimates of actual escapements but indices of the relative spawning escapements to those areas. Peak aerial survey counts were observed in late July for both the Copper River delta and the Bering River drainage (Figure 8). The most abundant age groups in escapements to the upper Copper River were fish aged 1.3 at 35.9% and 1.2 at 22.3% (Table 8). Fish aged 1.3 at 41.5% and 1.2 at 40.8% composed most of the Bering River escapement (Figure 9; Appendix C.5). Age 1.2 fish at 40.9% was the most abundant age group overall in Copper River delta escapements, and age-1.3 fish, 34.0%, were the next most abundant (Appendix C.4). Age-0.3 fish composed 14.7% of the upper Copper River, 12.7% of the Bering River, and 7.9% of the Copper River delta escapements. The age 2.3 contribution to the upper Copper River escapement was large (16.6%) compared to the age-2.3 component of the Copper River delta (1.9%) and Bering River escapements (0.5%).

An estimated 581,859 salmon passed the Miles Lake sonar site in 1990 (Table 5). Included in this count were 4,208 chinook salmon observed in upper Copper River aerial surveys and 21,664 sockeye salmon counted through a weir at Long Lake (Appendix D.2). Aerial surveys of upper Copper River tributaries accounted for the spawning grounds distribution of 61,062 sockeye salmon (Appendix D.3). Escapement at the sonar site was monitored from late May to early August (Figure 10). Daily counts of 7–14,000 fish occurred from late May through late June, and peak counts of >23,000 occurred in mid-June (Appendix D.1). Estimated age composition of the escapement past Miles Lake (Figures 9, 10; Appendix D.5) was based on samples collected from upriver subsistence and personal use fisheries (Table 7).

Chinook Salmon

Catch. Most of the 21,702 chinook salmon caught in the Copper River District in 1990 were harvested between 15 May and 12 June (Table 9; Figure 11). Percentage age composition of the commercial common property catch was 54.0% age 1.4, 25.0% age 1.3, 8.6% age 2.4, 5.8% age 1.2, and 6.6% other age groups (Table 10). Fish aged 1.4 and 1.3 were the most numerous in the catch throughout the season (Appendix A.3). The proportion of age-1.4 fish declined from 71.3% to 54.3% between the first and second samples, whereas the proportion of age-1.3 fish increased from 11.2% to 28.7% (Figure 12).

A total of 3,198 Chinook salmon were caught in the upper Copper River subsistence and personal use fisheries (Table 3). Most chinook salmon, 82.0%, were captured with dip nets, and the remainder were taken by fish wheels. No age or sex composition data were collected for the chinook subsistence or personal use fisheries.

Mills (1991) estimated a sport harvest of 2,302 chinook salmon from the upper Copper River drainage (Table 4). Virtually all of these fish were harvested in the Gulkana and Klutina River drainages. Samples of the sport catch were predominantly age 1.3 for both the Gulkana River at 63.6% and the Klutina River at 61.1% (Table 10; Appendix B.3). The remainder of the Gulkana River sport catch was age-1.4 fish, whereas age-1.2 fish composed most, 35.8%, of the remaining Klutina River catch.

Escapement. Aerial surveys of the 1990 chinook salmon escapement of 4,280 fish to the upper Copper River (Appendix D.4) indicate that the observed escapement was average. The escapement estimate for selected index streams was 2,906 fish compared to the 1980-89 average index of 2,942 (Brady et al. 1991). Carcasses sampled from the Gulkana River were 74.8% age-1.3 and 22.7% age-1.4 fish, whereas carcasses were mostly age-1.4 from the Little Tonsina River (71.9%), the East Fork Chistochina River (60.0%), and Kaina Creek (69.0%; Appendix D.6).

Coho Salmon

Catch. Substantial catches of coho salmon in the Copper River District began in early August and continued until the season closure in late September (Table 11; Figure 13). Of the 246,797 coho salmon caught in the Copper River District, 36.2% were age 1.1 and 59.5% were age 2.1 (Table 12). A large shift

in the age composition occurred between mid- and late August (Appendix A.4). Age-1.1 and 2.1 fish each composed 49.7% of the first catch sample in mid-August, but age-2.1 fish were more abundant thereafter: 63.4% in late August and 60.2% in early September.

The 1990 commercial catch of coho salmon in the Bering River District was 42,952 (Table 11). At 65.3% age-2.1 fish composed a slightly greater portion of the Bering River catch than in the Copper River commercial catch (Appendix A.5). There was little change in the age composition over time (Figure 14).

ADF&G estimated a subsistence and personal use catch of 1,615 coho salmon in the Copper/Bering River area (Table 3). Sport fishermen harvested 1,462 coho salmon from Eyak River and an unknown number from a few easily accessible coastal streams on the Copper River delta (Table 4). No age or sex composition data are available for these fisheries.

Escapement. No aerial escapement estimates were made for coho salmon in the upper Copper River drainage in 1990, but aerial survey counts of coho salmon escapements to the upper Copper River are normally quite low. Aerial surveys indicated 42,386 coho salmon escaped to spawning areas in the Copper River delta and 24,800 to the Bering River drainage (Appendix C.2; Table 5); these data are not estimates of the actual escapements but indices of the relative spawning escapements to those areas. No age or sex composition data are available for these fish.

Prince William Sound

Fisheries in the nine fishing districts in PWS (Districts 221–229) share geographic proximity, occur simultaneously, and are directed at salmon stocks of PWS origin. Chinook salmon are incidental in PWS catches and are not discussed in the text.

Sockeye Salmon

Catch. A total of 58,203 sockeye salmon were commercially harvested in PWS in 1990 (Table 2). The drift gillnet catch of 25,202 sockeye salmon included 11,988 fish from the Coghill District and 12,967 fish from the Eshamy District. The majority of the PWS purse seine catch of 22,213 sockeye salmon were caught in the Southwestern (15,718 fish) and Northern Districts (3,721 fish).

The largest sockeye catches in the Coghill District occurred during late June and early July and, after a 20-d closure, during the last week of July. Sockeye catches in the Eshamy District were largest from mid-June through mid-July and from late July through mid-August (Table 13; Figure 15). Age-1.2 fish composed 70.1% of the Eshamy District catch (Table 14; Appendix E.1).

The largest weekly purse seine catch of sockeye salmon in PWS, 7,900 fish, occurred in late July (Table 13) and accounted for 35.6% of the purse seine harvest totalling 22,213 fish. Most of the sockeye salmon purse seine harvest occurred in the Southwestern (70.8%) and Northern (16.8%) Districts.

The reported subsistence harvest of sockeye salmon in PWS was 41 fish (Table 3). Age and sex composition data were not available. A sport fishery harvest of 3,562 sockeye salmon was estimated for the PWS area (Table 4). Because Sport Fish Division summarizes and reports sport harvests by area differently than the Division of Commercial Fisheries, this estimate includes several hundred fish taken from drainages included in Copper River delta/Bering River area.

Escapement. A total of 8,949 sockeye salmon were counted through the Coghill River weir in 1990, and the escapement occurred in three separate groups (Figure 16; Appendix F.1). Approximately 54.1% of the escapement passed the weir from 5 July through 13 July, and the peak daily count of 1,775 fish occurred on 6 July. The percentage age composition through the weir was estimated at 63.1% age 1.3 and 21.3% age 1.2 (Table 15). The remaining 15.6% was primarily age 2.2 and 2.3. The contribution of age-1.3 fish was high for both samples, composing 65.6% in early July and 58.3% in mid-July (Figure 17; Appendix F.7).

Escapement through Eshamy weir of 14,234 sockeye salmon (Appendix F.2) occurred later than the Coghill weir escapement (Figure 16). Age composition of the escapement was 73.2% age 1.2 and 20.2% age 1.3. The percentage of age-1.2 fish increased from 65.6% in late July to 77.2% in mid-August (Figure 17; Appendix F.8).

A total of 2,207 fish were counted past a weir installed on the outlet of Jackpot Lake. The escapement occurred in three groups and the timing was similar to the Coghill River escapement (Figure 16). Peak daily counts were 317 fish on 2 July and 1,207 fish on 10 July (Appendix F.3). The escapement was mostly age-1.3 fish (78.3%). Age-1.2, -2.2, and -2.3 fish composed a combined 20.2% of the escapement. The age composition changed little between samples (Appendix F.9).

Robe Lake, Billys Hole, and Miners Lake sockeye salmon escapements were also sampled in 1990. These sockeye runs are generally smaller than those of the weired streams, and escapement information is provided by aerial surveys (Appendix F.4). Age-1.3 fish composed the largest part of the escapement to all three systems: Robe Lake escapement was 68.2%, Billys Hole was 84.7%, and Miners Lake was 79.2% age-1.3 fish (Appendix F.10).

Coho Salmon

In 1990, 89,997 coho salmon were harvested by commercial purse seine and 129,838 by commercial gillnet fisheries in PWS (Table 2). The largest purse seine catches occurred in the Southwestern (50.5%) and Eastern (20.2%) Districts. Nearly all (99.5%) of the coho salmon taken with gillnets in PWS were caught in the Coghill District. Most of these fish probably originated from the Wally Noerenberg Hatchery (C. Peckham, Alaska Department of Fish and Game, personal communication). Coho catches peaked in late August and early September (Table 16; Figure 18). No age data were collected from the catch.

The subsistence catch of coho salmon in PWS was only 253 fish (Table 3). In recent years the sport fishery in PWS has been increasingly directed to coho salmon. Mills (1991) estimated that 26,639 coho salmon were caught by sport fishermen in PWS and the drainages of the Copper River delta and Bering River (Table 4). A large portion of this catch came from successful returns of hatchery-reared coho salmon released at Cordova, Valdez, and Whittier in 1989 (Holland 1990). Sport fishermen harvested an estimated 11,000 coho salmon in PWS from FRED Division smolt releases (McKean 1991).

In addition to enhancement of common property and sport harvests, hatchery coho salmon also contributed 14,199 fish to the hatchery cost recovery sales harvest (Table 2). Solomon Gulch Hatchery at 11,201 fish and Wally Noerenberg Hatchery at 2,682 fish accounted for most of the hatchery cost recovery harvest.

Pink Salmon

The total commercial harvest of pink salmon in PWS for 1990 was 44,533,068 fish (Table 2). The commercial common property purse seine harvest of 32,964,133 fish was 74.0% of the total commercial harvest of pink salmon. Commercial common property purse seine fishermen harvested 54.0% of their catch in the Southwestern District, 24.2% in the Eastern District, and 16.6% in the Northern District (Table 17; Figure 19). Peak purse seine catches occurred in early July in the Eastern District, mid-August in the Northern District, mid- to late August in the Coghill District, and mid-August in the Northwestern, Southwestern, and Montague Districts (Figure 20).

The commercial common property purse seine and gillnet fisheries harvested 80.4% of the PWS total commercial catch of pink salmon, and 19.6% were taken in hatchery cost recovery fisheries. Preliminary estimates from coded wire tag recoveries indicate that approximately 25,169,732 pink salmon of the commercial common property harvest originated from hatcheries (Table 18). The total commercial harvest of hatchery-produced pink salmon in PWS was estimated at 33,902,390 fish, or 76.1% of the total commercial pink salmon harvest in PWS.

Subsistence harvest of pink salmon was <50 fish (Table 3). An estimated 49,146 pink salmon were caught by PWS sport fishermen and most were taken in the marine waters near Valdez (Table 4).

Estimated escapements of wild pink salmon in PWS during 1990 (Figure 21; Appendix F.5) were below anticipated levels in 5 of 9 districts (Brady et al. 1991). Escapement peaked for most districts between mid-August and early September (Figure 22).

Chum Salmon

Of the 959,838 chum salmon in the PWS total commercial harvest (Table 2), 272,518 fish or 28.4% were caught in commercial common property purse seine fisheries and 566,004 fish or 59.0% in commercial common property drift gillnet fisheries. Most of the commercial common property purse seine catch occurred in the Eastern (56.3%) and Northern Districts (27.7%), and the Southwestern (10.3%) and Coghill

(4.0%) Districts contributed most of the remainder (Table 19). Peak catches in the Eastern District occurred in late June, late July, and mid-August (Figure 23). Large catches in the Northern District occurred in late June and from late July through mid-August. Drift gillnet catches in the Coghill District peaked in mid-June and again in early August, whereas purse seine harvests occurred from late July through mid-August. The drift gillnet catch was split between the Coghill (53.2%) and Eshamy (46.8%) Districts where fishermen were targeting runs to the Wally Noerenberg and Main Bay Hatcheries. Gillnet catches in the Eshamy District peaked in mid-June and generally declined throughout the season.

Age-0.4 chum salmon composed 70.9% of the PWS commercial common property purse seine catch, and age-0.3 fish 20.6% (Table 20). For PWS gillnet catch samples, 56.6% were age-0.3 fish, and 42.3% age-0.4 fish. Temporal changes in age composition were variable among the districts sampled (Figure 24; Appendices E.2-E.6).

Hatchery cost recovery sales accounted for 24,554 chum salmon or 2.6% of the total commercial harvest of this species in 1990 (Table 2). Wally Noerenberg Hatchery accounted for 93.8% of the PWS chum salmon hatchery cost recovery harvest.

Preliminary estimates from coded wire tag mark-recapture data (Brady et al. 1991) indicate that approximately 192,451 fish or 20.1% of the total commercial harvest originated from hatcheries (Table 21). The commercial common property harvest estimate of hatchery-produced chum salmon was 167,897 fish composing 17.5% of the total commercial harvest of chum salmon in PWS.

Subsistence harvest of chum salmon in PWS was <50 fish (Table 3). The estimated total sport fishery harvest of 1,945 chum salmon for the PWS area occurred primarily in the marine waters near Valdez (Table 4).

A total of 77,535 chum salmon were taken in the brood stock harvest at Wally Noerenberg Hatchery in 1990 (Appendix F.11). Age-0.4 fish were predominant in samples collected 13–16 July at 61.0%, and 28–30 July at 56.3%, but age-0.3 fish at 55.7% predominated the 8–9 August sample (Appendix F.13).

Wild chum salmon escapements to surveyed PWS streams were estimated at 299,025 fish in 1990 (Appendix F.6). The escapements were below the 1965–1989 mean index in four of eight Districts (Brady et al. 1991).

LITERATURE CITED

- ADF&G (Alaska Department of Fish and Game). 1962. Cordova area annual report, 1962. Alaska Department of Fish and Game, Commercial Fisheries Division, Region 2 Report (unpublished), Cordova.
- ADF&G (Alaska Department of Fish and Game). 1964. Cordova area annual report, 1964. Alaska Department of Fish and Game, Commercial Fisheries Division, Region 2 Report (unpublished), Cordova.
- Brady, J.A., S.P. Morstad, E. Simpson, and E. Biggs. 1991. Prince William Sound annual finfish management report, 1990. Alaska Department of Fish and Game, Commercial Fisheries Division, Regional Information Report 2C91-14, Anchorage.
- Clutter, R., and L. Whitesel. 1956. Collection and interpretation of sockeye salmon scales. Bulletin of the International Pacific Salmon Fisheries Commission 9, Vancouver, British Columbia.
- Cochran, W. 1977. Sampling techniques, 3rd edition. John Wiley & Sons, Inc. New York.
- Crawford, D.L., and E.M. Simpson. 1989. Catch and escapement statistics for Copper River, Bering River, and Prince William Sound salmon, 1987. Alaska Department of Fish and Game, Division of Commercial Fisheries Division, Technical Fishery Report 89-17, Juneau.
- Crawford, D.L. and E.M. Simpson. 1990. Catch and escapement statistics for Copper River, Bering River, and Prince William Sound salmon, 1988. Alaska Department of Fish and Game, Division of Commercial Fisheries Division, Technical Fishery Report 91-06, Juneau.
- Geiger, H.J., editor. 1990. Pilot studies in tagging Prince William Sound hatchery pink salmon with coded-wire tags. Alaska Department of Fish and Game, Division of Commercial Fisheries, Fishery Research Bulletin 90-02, Juneau.
- Gilman, L., J. Phillips, and E.M. Simpson. 1990. Commercial salmon catch statistics for the Prince William Sound management area, 1990. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 2C89-09, Anchorage.
- Goodman, L. 1965. On simultaneous confidence intervals for multinomial populations. *Technometrics* 7:247-254.
- Holland, J.S., editor. 1990. FRED 1989 annual report to the Alaska State Legislature. Alaska Department of Fish and Game, FRED Technical Report Series 101., Juneau.

LITERATURE CITED (Continued)

- INPFC (International North Pacific Fisheries Commission). 1963. Annual report for 1961. Vancouver, British Columbia.
- McKean, M., editor. 1991. FRED 1990 annual report to the Alaska State Legislature. Alaska Department of Fish and Game, FRED Technical Report Series 109, Juneau.
- Merritt, M., and K. Roberson. 1983. Migratory timing of upper Copper River sockeye salmon (*Oncorhynchus nerka*) stocks, and its management implications to the commercial fishery. Alaska Department of Fish and Game, Division of Commercial Fisheries, Informational Leaflet 225, Juneau.
- Mills, M. 1991. Harvest, catch, and participation in Alaska sport fisheries during 1990. Alaska Department of Fish and Game, Division of Sport Fish, Fishery Data Series 91-58, Juneau.
- Sharr, S. 1983. Catch and escapement statistics for Copper and Bering River sockeye (*Oncorhynchus nerka*), chinook (*O. tshawytscha*), and coho salmon (*O. kisutch*), 1982. Alaska Department of Fish and Game, Division of Commercial Fisheries, Technical Data Report 98, Juneau.
- Sharr, S., and C. Peckham. 1988. Catch and escapement statistics for Copper River, Bering River, and Prince William Sound salmon, 1985. Alaska Department of Fish and Game, Division of Commercial Fisheries, Technical Fisheries Report 88-16, Juneau.
- Sharr, S., C. Peckham, and G. Carpenter. 1988. Catch and escapement statistics for Copper River, Bering River, and Prince William Sound salmon, 1986. Alaska Department of Fish and Game, Division of Commercial Fisheries, Technical Fisheries Report 88-17, Juneau.
- Tesch, F. 1970. Age and growth. Pages 98-126 in W. E. Ricker, editor. Methods for assessment of fish production in fresh waters. IBP Handbook No. 3, Blackwell Scientific Publications, Oxford, Great Britain.
- Thompson, S.H. 1964. The red salmon (*Oncorhynchus nerka*) of Copper River, Alaska. United States Department of the Interior, Fish and Wildlife Service, Bureau of Commercial Fisheries, Biological Laboratory, Manuscript Report 64-12, Auke Bay.
- Thompson, S. 1987. Sample size for estimating multinomial proportions. The American Statistician 41:42-46.
- Wilcock, J.A. 1993. Salmon catch and escapement statistics for Copper River, Bering River, and Prince William Sound, 1989. Alaska Department of Fish and Game, Division of Commercial Fisheries, Technical Fisheries Report 93-07, Juneau.

Table 1. Salmon harvest and indexed escapement by species and fishery from the combined upper Copper River and Copper/Bering River areas and Prince William Sound area, 1990.

Area and Fishery Element	Catch by Species (No. of Fish)				
	Sockeye	Chinook	Coho	Pink	Chum
Upper Copper River and Copper/Bering River Area					
Total Commercial Catch	853,404	21,748	289,860	1,598	7,546
Subsistence/Personal Use Catch	94,209	3,258	1,615	^b	^b
Sport Harvest ^a	4,346	2,308	2,923	174	22
Indexed Escapement	676,045	4,208	67,186		
Upper Copper River and Copper/Bering River Total	1,628,004	31,522	361,584	1,772	7,568
Prince William Sound Area					
Total Commercial Catch	58,203	415	234,414	44,533,068	959,838
Subsistence Catch	41	1	253	^c	^c
Sport Harvest ^a	3,241	418	24,861	49,146	1,945
Indexed Escapement	30,924	18	^d	1,325,852	299,025
Prince William Sound Total	92,409	852	259,528	45,908,066	1,260,808
Total All Areas	1,720,413	32,374	621,112	45,909,838	1,268,376

^a Some minor sport harvests of anadromous salmon are not reported by specific locations. Consequently, upper Copper River estimates may include a small number of fish from Susitna River tributaries, and the Prince William Sound estimates may include a small number of fish from Copper River delta/Bering River coastal streams.

^b A total of 162 fish of other species including salmon, trout, and whitefish were reported caught but species composition was not estimated.

^c A total of 38 fish of other species were reported caught and were estimated to be composed of approximately half pink and half chum salmon.

^d No Prince William Sound coho salmon streams are indexed.

Table 2. Commercial salmon harvest by species, gear type, and district from the Copper/Bering River and Prince William Sound areas, 1990.

Area/Gear	District or Hatchery Name	Location Code	Catch by Species (No. of Fish)				
			Sockeye	Chinook	Coho	Pink	Chum
Copper/Bering River Area							
Drift Gillnet	Copper River	212	844,778	21,702	246,797	1,596	7,545
	Bering River	200	8,332	14	42,952	2	1
	Total		853,110	21,716	289,749	1,598	7,546
Educational Permit *	Copper/Bering	200/212	294	32	111	0	0
Copper/Bering River Total			853,404	21,748	289,860	1,598	7,546
Prince William Sound Area							
Drift Gillnet	Coghill	223	11,988	126	128,605	1,907,510	301,209
	Eshamy	225	12,967	110	574	534,951	264,772
	Unakwik	229	247	3	127	9,986	23
	Total		25,202	239	129,306	2,452,447	566,004
Set Gillnet	Eshamy	225	10,204	56	532	369,589	94,494
	Total		10,204	56	532	369,589	94,494
Purse Seine	Eastern	221	1,445	59	18,212	7,970,364	153,344
	Northern	222	3,721	36	12,387	5,482,585	75,443
	Coghill	223	286	2	11,819	785,278	10,951
	Northwestern	224	1,034	2	2,032	891,444	4,591
	Southwestern	226	15,718	16	45,493	17,811,479	27,974
	Montague	227	0	0	50	10,658	3
	Southeastern	228	9	0	4	12,325	212
	Unakwik	229	0	0	0	0	0
	Total		22,213	115	89,997	32,964,133	272,518
Hatchery Cost Recovery Harvest *	Solomon Gulch	221-61	1	2	11,201	2,146,469	1,085
	Cannery Creek	222-21	0	0	0	552,498	0
	Wally Noerenberg	223-41	40	0	2,682	3,364,172	23,024
	Armin F. Koernig	226-62	67	0	316	2,669,519	445
	Main Bay	225-21	0	0	0	0	0
	Total		108	2	14,199	8,732,658	24,554
Educational Permit *	Coghill	223	0	0	377	9,292	303
	Eshamy	225	13	1	0	0	1,711
	Total		13	1	377	9,292	2,014
Confiscated			463	2	3	4,949	254
	Total		463	2	3	4,949	254
Prince William Sound Total			58,203	415	234,414	44,533,068	959,838
Total All Areas and Gear Types			911,607	22,163	524,274	44,534,666	967,384

* Cordova High School educational special permit.

^b Harvest is from purse seines.

Table 3. Subsistence and personal use harvest by species, fishery, and gear type for the Copper/Bering River and Prince William Sound areas, 1990.

Area/Fishery	Gear	Location	Catch by Species (No. of Fish) ^a			
			Sockeye	Chinook	Coho	Other ^b
Copper/Bering River Area						
Personal Use	Dip Net	Upper Copper River	63,057	2,583	1,446	155
	Fish Wheel	Upper Copper River	736	11	0	0
	Total		63,793	2,594	1,446	155
Subsistence	Dip Net	Upper Copper River	2,616	40	44	3
	Fish Wheel	Upper Copper River	27,331	564	43	4
	Drift Gillnet	Copper/Bering River	469	60	82	0
	Total		30,416	664	169	7
Copper/Bering River Total			94,209	3,258	1,615	162
Prince William Sound						
Subsistence	Drift Gillnet	Prince William Sound General	0	0	7	4
	Mixed Gear ^c	Tatitlek	5	0	241	14 ^d
		Southwestern (Chenega)	36	1	5	20 ^d
Prince William Sound Total			41	1	253	38
Total All Areas			94,250	3,259	1,868	200

^a Data are preliminary and based on incomplete tag returns.

^b Includes steelhead, char, whitefish, other salmon, and miscellaneous species.

^c Special subsistence harvest initiated in 1989.

^d Other species composition estimated to be half pink and half chum salmon.

Table 4. Sport fishery harvest and effort by location and species in the upper Copper River and in the Copper River delta, Bering River, and Prince William Sound areas combined, 1990.

Area	Location/Fishery	Anglers	Trips	Days Fished	Sport Fish Harvest by Species				
					Sockeye	Chinook	Coho	Pink	Chum
Upper Copper River *	Gulkana River								
	Float - Paxson to Sourdough	2,156	1,562	3,594	381	239	0	0	0
	Float - Sourdough to Highway	3,566	2,496	4,594	552	525	0	0	0
	Other	6,996	7,251	10,594	1,464	863	0	0	0
	Klutina River								
	Boat	1,358	1,223	1,358	140	280	0	0	0
	Bank	3,277	3,141	4,198	662	303	0	0	0
	Other Streams	2,923	3,534	4,717	140	75	0	0	0
	Tolsona Lake	458	289	495	0	0	0	0	0
	Lake Louise	3,770	3,651	5,506	0	0	0	0	0
	Susitna Lake	1,087	1,070	2,154	0	0	0	0	0
	Van (Silver) Lake	696	560	736	0	0	0	0	0
	Paxson Lake	3,226	2,462	3,890	70	0	0	0	0
	Summit Lake (near Paxson)	1,834	1,545	2,132	160	0	0	0	0
	Other Lakes	4,623	3,976	6,823	0	17	0	0	0
Area Total		26,302 *	32,760	50,791	3,569	2,302	0	0	0
Copper River delta, Bering River, and Prince William Sound	Freshwater:								
	Eyak River	818	3,501	2,264	272	0	1,462	0	0
	Eshamy Creek and Lagoon	278	196	278	175	0	14	23	0
	Coghill River	327	229	327	49	0	28	12	11
	Alaganik Slough	360	916	1,456	0	0	316	0	0
	Other Streams	1,439	1,781	2,285	456	6	1,075	174	22
	Other Lakes	997	1,179	1,129	49	0	70	0	0
	Subtotal	3,092 *	7,802	7,739	1,001	6	2,965	209	33
	Saltwater:								
	Valdez Bay								
	Boat	15,854	24,687	39,487	786	141	14,250	18,077	714
	Shoreline	3,125	5,497	6,474	262	34	724	6,420	45
	Shoreline/Road System	12,941	18,061	25,289	582	45	3,656	22,233	499
	Passage Canal (Whittier)								
	Boat	3,141	5,055	8,291	126	74	844	789	113
	Shoreline	425	556	787	0	11	464	81	0
	Hinchinbrook Island-Boat	572	654	1,032	0	0	253	93	0
	Knight Island Passage-Boat	246	376	1,129	0	0	21	186	0
	Orca Inlet								
	Boat	589	3,452	2,243	87	40	309	139	34
	Shoreline	606	1,620	1,828	0	11	787	23	11
	Other								
	Boat	4,039	6,327	9,332	650	0	1,804	640	316
	Shoreline	1,228	2,404	2,108	68	56	562	256	180
Subtotal		35,894 *	68,689	98,000	2,561	412	23,674	48,937	1,912
Area Total		37,464 *	76,491	105,739	3,562	418	26,639	49,146	1,945
Total All Areas		63,766 *	109,251	156,530	7,131	2,720	26,639	49,146	1,945

* Includes drainages of the Copper River upstream from a line between the south bank of Haley Creek and the south bank of Canyon Creek in Wood Canyon, and the upper Susitna River drainage below its confluence with the Oshetna River. Does not include the Oshetna River.

* Maximum estimate. Includes some fishermen who may have fished only in waters of the upper Susitna River drainage.

* Angler totals may not equal sum of sites due to some anglers fishing at more than one site.

Table 5. Salmon escapements and escapement indices by species and district in the Copper/Bering River and Prince William Sound areas, 1990.

Area and District	Statistical Area	Escapement by Species				
		Sockeye	Chinook	Coho	Pink	Chum
Copper/Bering River Area ^a						
Copper River – Copper River delta Upper Copper River	212	74,445 581,859 ^b	4,208	42,386		
Bering River	200	19,741		24,800		
Area Total		676,045	4,208	67,186		
Prince William Sound Area ^c						
Eastern	221	450 ^d		443,660		115,100
Northern	222	1,912 ^d		131,580		112,480
Coghill	223	10,451 ^e	7 ^f	49,110		26,020
Northwestern	224	1,300 ^d		115,870		37,020
Eshamy	225	14,234 ^f		17,870		0
Southwestern	226	2,577 ^e	11 ^f	150,100		80
Montague	227			113,572		1,050
Southeastern	228			304,090		7,275
Area Total		30,924	18	1,325,852		299,025

^a Based on periodic aerial surveys of salmon streams and includes counts from all systems surveyed, not just the historical index streams (Appendices C.1–2, D.3). Escapements of salmon species not noted are small and not indexed.

^b Miles Lake sonar count (Appendix D.1). Species composition was not estimated; however, sockeye salmon are by far the most abundant species. Aerial surveys indicated coho, pink, and chum salmon escapements to the upper Copper River were small.

^c Escapement estimates for pink and chum salmon in Prince William Sound are based on aerial counts of regularly surveyed streams adjusted for stream life. Escapements of other salmon species are generally insignificant and are not recorded except as noted.

^d Based on peak observed aerial count during regularly scheduled surveys.

^e Based on weir counts plus peak observed aerial counts of other district streams in scheduled surveys.

^f Weir count.

Table 6. Copper/Bering River management area sockeye salmon commercial common property catch and effort by district and fishing period from final fish ticket summaries, 1990.

Statistical Week	Period Dates	Copper River			Bering River		
		Hours	Effort ^a	Catch	Hours	Effort ^a	Catch
20	05/14-05/15	24	447	19,646		Closed	
20	05/17-05/18	24	450	70,246		Closed	
21	05/21-05/22	24	465	81,316		Closed	
21	05/25-05/25	12	461	57,087		Closed	
22	05/28-05/29	36	498	97,206		Closed	
22	05/31-06/01	24	489	47,881		Closed	
23	06/04-06/05	24	434	55,957		Closed	
24	06/11-06/12	24	389	68,726		Closed	
24	06/14-06/15	24	281	40,159		Closed	
25	06/18-06/19	24	224	36,812	24	28	5,293
25	06/21-06/22	24	218	38,196	24	10	1,899
26	06/25-06/26	24	163	23,310	24	5	1,036
26	06/28-06/30	36	182	29,319	24	0	0
27	07/02-07/03	24	169	22,338	24	0	0
27	07/05-07/07	36	208	32,050	36	1	76
28	07/09-07/10	24	199	18,836	24	0	0
28	07/12-07/14	36	218	29,385	36	0	0
29	07/16-07/17	24	244	20,487	24	0	0
29	07/19-07/21	36	223	13,901	36	0	0
30	07/23-07/24	24	107	9,837	24	0	0
30	07/26-07/28	36	101	8,065	36	0	0
31	07/30-07/31	24	110	7,270	24	0	0
31	08/02-08/04	36	89	7,070	36	0	0
32	08/06-08/07	24	94	3,625	24	2	0
32	08/09-08/11	36	88	2,095	36	0	0
33	08/13-08/15	48	202	2,622	48	1	1
34	08/20-08/22	48	225	814	48	29	13
35	08/27-08/29	48	271	451	48	47	5
36	09/06-09/08	36	276	40	36	67	7
37	09/12-09/14	48	168	24	48	43	2
38	09/19-09/21	48	140	5	48	10	0
39	09/26-09/28	48	127	2	48	0	0
40	10/03-10/05	48	58	0		Closed	
41	10/10-10/12	48	5	0		Closed	
Total		1,104	514	844,778	780	109	8,332

^a Number of permits reporting catches.

Table 7.

Estimated age composition of Copper/Bering River area sockeye salmon in commercial common property drift gillnet catches and upper Copper River subsistence and personal use fish wheel and dip net catches, 1990.

Fishery	Districts	Sample Size	Total Catch	Percentage of Catch by Brood Year and Age Group													
				1987		1986			1985			1984			1983		
				0.2	1.1	0.3	1.2	2.1	0.4	1.3	2.2	1.4	2.3	3.2	2.4	3.3	
Commercial Common Property Catch	Copper River	4,056	844,778	0.5	0.1	16.2	12.5	0.0	0.1	53.5	2.2	0.6	14.2	0.0	0.1	0.0	
	Bering River	537	8,332	0.7	0.0	9.5	44.5	0.0	0.0	41.5	0.7	0.7	2.2	0.0	0.0	0.0	
Subsistence/ Personal Use	Upper Copper River	2,485	93,740	2.2	0.6	12.2	24.7	0.1	0.0	37.3	6.9	0.4	15.3	0.0	0.2	0.2	

Table 8. Estimated age composition of sockeye salmon in escapements to the Copper and Bering River systems, 1990.

				Percentage of Escapement by Brood Year and Age Group														
				1988		1987		1986			1985			1984		1983		
Drainage System	Location	Sample Size	Escapement Estimate	0.1	0.2	1.1	0.3	1.2	2.1	0.4	1.3	2.2	1.4	2.3	1.5	2.4	3.3	
Copper River																		
Upper Copper River *	Miles Lake Sonar	2,485	581,859	0.0	2.3	0.4	14.5	22.3	0.1	0.0	35.9	7.1	0.4	16.6	0.0	0.2	0.2	
Copper River delta	Eyak Lake - South Beaches	434	3,400	0.0	6.5	0.0	5.7	44.8	0.0	0.0	36.3	2.3	0.0	4.4	0.0	0.0	0.0	
	Eyak Lake - Middle Arm	831	4,570	0.0	2.0	0.3	9.3	24.5	0.0	0.0	58.7	2.5	0.2	2.5	0.0	0.0	0.0	
	Eyak Lake - Hatchery Creek	20	400	0.0	0.0	0.0	5.0	40.0	0.0	0.0	40.0	5.0	0.0	10.0	0.0	0.0	0.0	
	McKinley Lake	516	3,400	0.0	5.8	0.8	5.0	62.6	0.0	0.0	21.5	2.5	0.4	1.4	0.0	0.0	0.0	
	27 Mile Creek	494	3,360	0.0	18.0	1.0	10.5	43.5	0.0	0.0	23.1	2.4	0.6	0.8	0.0	0.0	0.0	
	39 Mile Creek	681	5,000	0.0	2.7	0.0	7.4	19.6	0.0	0.0	63.8	2.9	0.0	3.6	0.0	0.0	0.0	
	Pleasant Creek	435	3,190	0.0	6.9	0.2	20.7	27.6	0.2	0.2	42.3	0.9	0.5	0.2	0.2	0.0	0.0	
	Ragged Point River	687	8,950	0.0	5.4	0.4	10.8	34.6	0.0	0.0	37.6	5.7	0.3	5.2	0.0	0.0	0.0	
	Martin Lake	617	13,440	0.8	6.6	6.5	4.4	50.9	0.0	0.0	20.7	8.3	0.0	1.8	0.0	0.0	0.0	
	Little Martin Lake	488	5,700	0.4	1.4	4.1	1.8	54.1	0.0	0.0	37.9	0.2	0.0	0.0	0.0	0.0	0.0	
	Tokun Lake	481	4,200	0.0	1.5	0.2	12.1	29.3	0.0	0.2	54.1	1.0	1.5	0.2	0.0	0.0	0.0	
	Martin River Slough	540	13,900	0.7	21.9	3.3	8.1	39.1	0.6	0.0	24.6	0.7	0.0	0.9	0.0	0.0	0.0	
Copper River delta Combined		6,224	69,510	0.3	8.7	2.6	7.9	40.9	0.1	0.0	34.0	3.2	0.2	1.9	0.0	0.0	0.0	
Bering River																		
	Bering Lake	566	16,325	0.2	3.5	0.9	13.4	41.3	0.0	0.0	40.6	0.0	0.0	0.0	0.0	0.0	0.0	
	Clear Creek	75	700	0.0	1.3	0.0	2.7	16.0	0.0	0.0	66.7	0.0	0.0	13.3	0.0	0.0	0.0	
	Kushtaka Lake	385	385	0.0	2.3	0.0	1.6	62.3	0.0	0.3	30.4	1.3	1.6	0.3	0.0	0.0	0.0	
Bering River Combined		1,026	17,410	0.2	3.4	0.8	12.7	40.8	0.0	0.0	41.5	0.0	0.0	0.5	0.0	0.0	0.0	

* Age composition estimated using samples from personal use and subsistence fisheries at Chitina. Passage date at Miles Lake lagged using an estimated swimming speed obtained from mark and recapture data.

Table 9. Copper/Bering River area chinook salmon commercial common property catch and effort by district and fishing period from final fish ticket summaries, 1990.

Statistical Week	Period Dates	Copper River District			Bering River District		
		Hours	Effort ^a	Catch	Hours	Effort ^a	Catch
20	05/14-05/15	24	447	2,984		Closed	
20	05/17-05/18	24	450	3,564		Closed	
21	05/21-05/22	24	465	2,899		Closed	
21	05/25-05/25	12	461	2,015		Closed	
22	05/28-05/29	36	498	3,068		Closed	
22	05/31-06/01	24	489	2,112		Closed	
23	06/04-06/05	24	434	2,138		Closed	
24	06/11-06/12	24	389	1,567		Closed	
24	06/14-06/15	24	281	536		Closed	
25	06/18-06/19	24	224	371	24	28	8
25	06/21-06/22	24	218	188	24	10	3
26	06/25-06/26	24	163	84	24	5	2
26	06/28-06/30	36	182	69	24	0	0
27	07/02-07/03	24	169	18	24	0	0
27	07/05-07/07	36	208	31	36	1	0
28	07/09-07/10	24	199	7	24	0	0
28	07/12-07/14	36	218	19	36	0	0
29	07/16-07/17	24	244	10	24	0	0
29	07/19-07/21	36	223	7	36	0	0
30	07/23-07/24	24	107	0	24	0	0
30	07/26-07/28	36	101	0	36	0	0
31	07/30-07/31	24	110	1	24	0	0
31	08/02-08/04	36	89	2	36	0	0
32	08/06-08/07	24	94	0	24	2	0
32	08/09-08/11	36	88	2	36	0	0
33	08/13-08/15	48	202	5	48	1	0
34	08/20-08/22	48	225	2	48	29	1
35	08/27-08/29	48	271	3	48	47	0
36	09/06-09/08	36	276	0	36	67	0
37	09/12-09/14	48	168	0	48	43	0
38	09/19-09/21	48	140	0	48	10	0
39	09/26-09/28	48	127	0	48	0	0
40	10/03-10/05	48	58	0		Closed	
41	10/10-10/12	48	5	0		Closed	
Total		1,104	514	21,702	780	109	14

^a Number of permits reporting catches.

Table 10. Estimated age composition of Copper River chinook salmon in commercial common property drift gillnet catches, rod and reel sport catches, and escapements, 1990.

Fishery Element	Area	Location	Sample Size	Estimated Catch or Escapement	Percentage of Catch or Escapement by Brood Year and Age Group													
					1987		1986			1985		1984			1983			1982
					0.2	1.1	0.3	1.2	2.1	1.3	2.2	1.4	2.3	3.2	1.5	2.4	3.3	2.5
Commercial Common Property Catch	Copper River District	Stat Area 212	1,594	21,702	0.3	0.3	0.0	5.8	0.2	25.0	1.3	54.0	2.1	0.2	1.8	8.6	0.1	0.3
Sport Catch	Upper Copper River	Gulkana River	55	1,627	0.0	0.0	0.0	0.0	0.0	63.6	0.0	36.4	0.0	0.0	0.0	0.0	0.0	0.0
		Klutina River	95	583	0.0	0.0	0.0	35.8	0.0	61.1	0.0	1.1	0.0	0.0	2.1	0.0	0.0	0.0
Escapement	Upper Copper River	Gulkana River	119	2,476	0.0	0.0	0.0	1.7	0.0	74.8	0.0	22.7	0.0	0.0	0.8	0.0	0.0	0.0
		Little Tonsina River	32	57	0.0	0.0	0.0	0.0	0.0	28.1	0.0	71.9	0.0	0.0	0.0	0.0	0.0	0.0
		East Fork of the Chistochina River	30	615	0.0	0.0	0.0	0.0	0.0	40.0	0.0	60.0	0.0	0.0	0.0	0.0	0.0	0.0
		Kalna Creek	42	411	0.0	0.0	0.0	0.0	0.0	31.0	0.0	69.0	0.0	0.0	0.0	0.0	0.0	0.0
		Mendeltna Creek	2	320	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 11. Copper/Bering River area coho salmon commercial common property catch and effort by district and fishing period from final fish ticket summaries, 1990.

Statistical Week	Period Dates	Copper River			Bering River		
		Hours	Effort ^a	Catch	Hours	Effort ^a	Catch
20	05/14-05/15	24	447	2		Closed	
20	05/17-05/18	24	450	0		Closed	
21	05/21-05/22	24	465	0		Closed	
21	05/25-05/25	12	461	0		Closed	
22	05/28-05/29	36	498	71		Closed	
22	05/31-06/01	24	489	76		Closed	
23	06/04-06/05	24	434	69		Closed	
24	06/11-06/12	24	389	2		Closed	
24	06/14-06/15	24	281	4		Closed	
25	06/18-06/19	24	224	14	24	28	0
25	06/21-06/22	24	218	9	24	10	0
26	06/25-06/26	24	163	3	24	5	0
26	06/28-06/30	36	182	22	24	0	0
27	07/02-07/03	24	169	16	24	0	0
27	07/05-07/07	36	208	374	36	1	0
28	07/09-07/10	24	199	4	24	0	0
28	07/12-07/14	36	218	91	36	0	0
29	07/16-07/17	24	244	165	24	0	0
29	07/19-07/21	36	223	536	36	0	0
30	07/23-07/24	24	107	277	24	0	0
30	07/26-07/28	36	101	400	36	0	0
31	07/30-07/31	24	110	1,341	24	0	0
31	08/02-08/04	36	89	2,896	36	0	0
32	08/06-08/07	24	94	5,449	24	2	550
32	08/09-08/11	36	88	9,737	36	0	0
33	08/13-08/15	48	202	23,308	48	1	120
34	08/20-08/22	48	225	42,416	48	29	5,117
35	08/27-08/29	48	271	48,532	48	47	14,201
36	09/06-09/08	36	276	53,818	36	67	15,436
37	09/12-09/14	48	168	26,921	48	43	6,763
38	09/19-09/21	48	140	18,160	48	10	765
39	09/26-09/28	48	127	4,957	48	0	0
40	10/03-10/05	48	58	7,044		Closed	
41	10/10-10/12	48	5	83		Closed	
Total		1,104	514	246,797	780	109	42,952

^a Number of permits reporting catches.

Table 12. Estimated age composition of Copper/Bering River area coho salmon in commercial common property drift gillnet catches, 1990.

Districts	Sample Size	Commercial Common Property Catch	Percentage of Catch by Brood Year and Age Group			
			1988	1987	1986	1985
			0.1	1.1	2.1	3.1
Copper River	1,600	246,797	0.4	36.2	59.5	4.0
Bering River	993	42,952	0.1	28.3	65.3	6.3

Table 13. Prince William Sound sockeye salmon weekly commercial common property catch and effort by district and gear type from final fish ticket summaries, 1990.

Purse Seine Fisheries																						
		Eastern District			Northern District			Coghill District			Northwestern District			Southwestern District			Montague District			Southeastern District		
Statistical Week	Dates	Hours	Effort*	Catch	Hours	Effort*	Catch	Hours	Effort*	Catch	Hours	Effort*	Catch	Hours	Effort*	Catch	Hours	Effort*	Catch	Hours	Effort*	Catch
24	06/10 - 06/16		Closed			Closed			Closed			Closed			Closed			Closed			Closed	
25	06/17 - 06/23		Closed			Closed			Closed			Closed			Closed			Closed			Closed	
26	06/24 - 06/30	12	177	167		37	110					Closed			Closed			Closed		12	0	0
27	07/01 - 07/07	48	243	286	24	8	55					Closed			Closed			Closed		24	0	0
28	07/08 - 07/14	24	246	294	24	23	88					Closed			Closed			Closed		24	0	0
29	07/15 - 07/21	24	218	100		Closed						Closed			Closed			Closed			Closed	
30	07/22 - 07/28	24	132	80	24	139	532	24	14	103		Closed		24	38	280		Closed			Closed	
31	07/29 - 08/04	48	24	119	48	104	841	60	22	102	60	23	395	60	192	6,443	60	0	0	60	1	0
32	08/05 - 08/11	108	30	180	108	110	1,686	108	19	45	108	25	519	108	168	4,048	108	3	0	108	0	0
33	08/12 - 08/18	80	37	47	80	88	294	60	9	16	60	7	112	60	191	2,270	60	0	0	60	1	9
34	08/19 - 08/25	72	19	172	72	80	115	104	38	17	56	16	8	92	223	2,505	92	0	0	92	0	0
35	08/26 - 09/01		Closed			Closed		168	31	2		Closed		36	92	172		Closed			Closed	
36	09/02 - 09/08		Closed			Closed		168	10	1		Closed			Closed			Closed			Closed	
37	09/09 - 09/15		Closed			Closed		168	0	0		Closed			Closed			Closed			Closed	
38	09/16 - 09/22		Closed			Closed		168	0	0		Closed			Closed			Closed			Closed	
39	09/23 - 09/29		Closed			Closed		168	0	0		Closed			Closed			Closed			Closed	
40	09/30 - 10/06		Closed			Closed		82	0	0		Closed			Closed			Closed			Closed	
Totals		440	259	1,445	392	220	3,721	1,278	89	286	284	43	1,034	380	248	15,718	320	3	0	320	2	9

-Continued-

Table 13. (page 2 of 2)

Gillnet Fisheries													
Statistical Week	Dates	Unakwik Drift Gillnet			Coghill Drift Gillnet			Eshamy Drift and Set Gillnet			Gillnet Total	Purse Seine Total	PWS Total Catch
		Hours	Effort ^a	Catch	Hours	Effort ^a	Catch	Hours	Effort ^a	Catch			
24	06/10 – 06/16		Closed		24	142	312	136	195	651	963	0	963
25	06/17 – 06/23		Closed		48	244	1,818	168	267	2,459	4,277	0	4,277
26	06/24 – 06/30		Closed		48	297	3,428	168	303	3,464	6,892	277	7,169
27	07/01 – 07/07		Closed		24	155	1,309	168	195	2,791	4,100	341	4,441
28	07/08 – 07/14		Closed			Closed		168	161	5,202	5,202	382	5,584
29	07/15 – 07/21		Closed			Closed		34	31	447	447	100	547
30	07/22 – 07/28	24	3	74	24	184	1,967		Closed		2,041	995	3,036
31	07/29 – 08/04	60	1	34	60	287	1,156	168	60	3,954	5,144	7,900	13,044
32	08/05 – 08/11	108	1	97	108	289	1,086	168	45	2,408	3,591	6,478	10,069
33	08/12 – 08/18	56	2	26	60	242	257	168	42	1,235	1,518	2,748	4,266
34	08/19 – 08/25	20	2	16	168	233	265	168	27	364	645	2,817	3,462
35	08/26 – 09/01		Closed		168	184	180	168	18	196	376	174	550
36	09/02 – 09/08		Closed		168	220	177	168	0	0	177	1	178
37	09/09 – 09/15		Closed		168	95	12	168	0	0	12	0	12
38	09/16 – 09/22		Closed		168	40	21	168	0	0	21	0	21
39	09/23 – 09/29		Closed		168	3	0	168	0	0	0	0	0
40	09/30 – 10/06		Closed		84	1	0	84	0	0	0	0	0
Totals		268	5	247	1,488	403	11,988	2,438	302	23,171	35,406	22,213	57,619

^a Number of permits reporting catches.

Table 14. Estimated age composition of sockeye salmon in Prince William Sound commercial common property gillnet catch, 1990.

District	Sample Size	Commercial Common Property Catch	Percentage of Catch by Brood Year and Age Group					
			1987		1986	1985		1984
			0.2	1.1	1.2	1.3	2.2	2.3
Eshamy	278	23,171	0.7	0.4	70.1	27.0	0.7	1.1

Table 15. Estimated age composition of sockeye salmon in sampled escapements to Prince William Sound, 1990.

Location	Sample Size	Estimated Escapement	Percentage of Catch by Brood Year and Age Group							
			1987	1986		1985		1984		1983
			0.2	0.3	1.2	1.3	2.2	1.4	2.3	2.4
Coghill Lake	857	8,949 ^a	0.5	1.5	21.3	63.1	5.7	2.4	5.4	0.1
Eshamy Lake	1,043	14,234 ^a	0.0	0.0	73.2	20.2	6.6	0.0	0.0	0.0
Jackpot Lake	473	2,207 ^a	0.0	0.2	7.0	78.3	6.6	1.3	6.6	0.0
Robe Lake	44	450 ^b	0.0	6.8	13.6	68.2	0.0	0.0	11.4	0.0
Billy's Hole	163	1,900 ^b	0.0	3.1	4.9	84.7	0.6	0.0	6.7	0.0
Miner's Lake	399	2,600 ^b	0.0	0.0	7.5	79.2	0.8	0.0	12.5	0.0

^a Weir counts.

^b Peak aerial survey estimate.

Table 16. Prince William Sound coho salmon weekly commercial common property catch and effort by district and gear type from final fish ticket summaries, 1990.

Purse Seine Fisheries																						
		Eastern District			Northern District			Coghill District			Northwestern District			Southwestern District			Montague District			Southeastern District		
Statistical Week	Dates	Hours	Effort*	Catch	Hours	Effort*	Catch	Hours	Effort*	Catch	Hours	Effort*	Catch	Hours	Effort*	Catch	Hours	Effort*	Catch	Hours	Effort*	Catch
24	06/10 – 06/16		Closed			Closed			Closed			Closed			Closed			Closed			Closed	
25	06/17 – 06/23		Closed			Closed			Closed			Closed			Closed			Closed			Closed	
26	06/24 – 06/30	12	177	16	12	37	2		Closed			Closed			Closed			Closed		12	0	0
27	07/01 – 07/07	48	243	50	24	8	1		Closed			Closed			Closed			Closed		24	0	0
28	07/08 – 07/14	24	246	148	24	23	14		Closed			Closed			Closed			Closed		24	0	0
29	07/15 – 07/21	24	218	47		Closed			Closed			Closed			Closed			Closed			Closed	
30	07/22 – 07/28	24	132	1,201	24	139	109	24	14	34		Closed		24	38	84		Closed			Closed	
31	07/29 – 08/04	48	24	317	48	104	708	60	22	217	60	23	198	60	192	2,240	60	0	0	60	1	0
32	08/05 – 08/11	108	30	2,129	108	110	3,624	108	19	83	108	25	726	108	168	4,620	108	3	50	108	0	0
33	08/12 – 08/18	80	37	3,740	80	88	3,347	60	9	177	60	7	468	60	191	10,658	60	0	0	60	1	4
34	08/19 – 08/25	72	19	10,564	72	80	4,582	104	38	4,278	56	16	640	92	223	27,197	92	0	0	92	0	0
35	08/26 – 09/01		Closed			Closed		168	31	5,986		Closed		36	92	694		Closed			Closed	
36	09/02 – 09/08		Closed			Closed		168	10	1,044		Closed			Closed			Closed			Closed	
37	09/09 – 09/15		Closed			Closed		168	0	0		Closed			Closed			Closed			Closed	
38	09/16 – 09/22		Closed			Closed		168	0	0		Closed			Closed			Closed			Closed	
39	09/23 – 09/29		Closed			Closed		168	0	0		Closed			Closed			Closed			Closed	
40	09/30 – 10/06		Closed			Closed		82	0	0		Closed			Closed			Closed			Closed	
Totals		440	259	18,212	392	220	12,387	1,278	89	11,819	284	43	2,032	380	248	45,493	320	3	50	320	2	4

-Continued-

Table 16. (Page 2 of 2)

Gillnet Fisheries													
Statistical Week	Dates	Unakwik Drift Gillnet			Coghill Drift Gillnet			Eshamy Drift & Set Gillnet			Gillnet Total	Purse Seine Total	PWS Total Common Property Catch
		Hours	Effort*	Catch	Hours	Effort*	Catch	Hours	Effort*	Catch			
24	06/10 – 06/16		Closed		24	142	0	136	195	2	2	0	2
25	06/17 – 06/23		Closed		48	244	3	168	267	7	10	0	10
26	06/24 – 06/30		Closed		48	297	11	168	303	9	20	18	38
27	07/01 – 07/07		Closed		24	155	6	168	195	4	10	51	61
28	07/08 – 07/14		Closed			Closed		168	161	63	63	162	225
29	07/15 – 07/21		Closed			Closed		34	31	2	2	47	49
30	07/22 – 07/28	24	3	0	24	184	141		Closed		141	1,428	1,569
31	07/29 – 08/04	60	1	0	60	287	537	168	60	110	647	3,680	4,327
32	08/05 – 08/11	108	1	86	108	289	4,458	168	45	238	4,782	11,232	16,014
33	08/12 – 08/18	56	2	23	60	242	7,247	168	42	328	7,598	18,394	25,992
34	08/19 – 08/25	20	2	18	168	233	21,945	168	27	214	22,177	47,261	69,438
35	08/26 – 09/01		Closed		168	184	27,404	168	18	129	27,533	6,680	34,213
36	09/02 – 09/08		Closed		168	220	37,183	168	0	0	37,183	1,044	38,227
37	09/09 – 09/15		Closed		168	95	22,237	168	0	0	22,237	0	22,237
38	09/16 – 09/22		Closed		168	40	7,131	168	0	0	7,131	0	7,131
39	09/23 – 09/29		Closed		168	3	209	168	0	0	209	0	209
40	09/30 – 10/06		Closed		84	1	93	84	0	0	93	0	93
Totals		268	5	127	1,488	403	128,605	1,682	365	1,106	129,838	89,997	219,835

* Number of permits reporting catch.

Table 17. Prince William Sound pink salmon weekly commercial common property catch and effort by district and gear type from final fish ticket summaries, 1990.

Purse Seine Fisheries																						
Statistical Week	Dates	Eastern District			Northern District			Coghill District			Northwestern District			Southwestern District			Montague District			Southeastern District		
		Hours	Effort*	Catch	Hours	Effort*	Catch	Hours	Effort*	Catch	Hours	Effort*	Catch	Hours	Effort*	Catch	Hours	Effort*	Catch	Hours	Effort*	Catch
24	06/10 - 06/16	Closed			Closed			Closed			Closed			Closed			Closed			Closed		
25	06/17 - 06/23	Closed			Closed			Closed			Closed			Closed			Closed			Closed		
26	06/24 - 06/30	12	177	559,391	12	37	35,041													12	0	0
27	07/01 - 07/07	48	243	3,660,468	24	8	32,762													24	0	0
28	07/08 - 07/14	24	246	1,225,441	24	23	65,922													24	0	0
29	07/15 - 07/21	24	218	1,302,575	Closed			Closed			Closed			Closed			Closed			Closed		
30	07/22 - 07/28	24	132	498,000	24	139	386,931	24	14	21,241	Closed			24	38	204,042	Closed			Closed		
31	07/29 - 08/04	48	24	155,932	48	104	1,124,611	60	22	125,995	60	23	169,377	60	192	3,657,752	60	0	0	60	1	3,670
32	08/05 - 08/11	108	30	376,245	108	110	1,909,076	108	19	193,783	108	25	405,020	108	168	4,534,848	108	3	10,658	108	0	0
33	08/12 - 08/18	80	37	152,250	80	88	1,428,778	60	9	77,575	60	7	217,357	60	191	4,607,728	60	0	0	60	1	8,655
34	08/19 - 08/25	72	19	40,062	72	80	499,464	104	38	163,503	56	16	99,690	92	223	4,531,205	92	0	0	92	0	0
35	08/26 - 09/01	Closed			Closed			168	31	179,715	Closed			36	92	275,904	Closed			Closed		
36	09/02 - 09/08	Closed			Closed			168	10	23,466	Closed			Closed			Closed			Closed		
37	09/09 - 09/15	Closed			Closed			168	0	0	Closed			Closed			Closed			Closed		
38	09/16 - 09/22	Closed			Closed			168	0	0	Closed			Closed			Closed			Closed		
39	09/23 - 09/29	Closed			Closed			168	0	0	Closed			Closed			Closed			Closed		
40	09/30 - 10/06	Closed			Closed			82	0	0	Closed			Closed			Closed			Closed		
Totals		440	259	7,970,364	392	220	5,482,585	1,278	89	785,278	284	43	891,444	380	248	17,811,479	320	3	10,658	320	2	12,325

-Continued-

Table 17. (Page 2 of 2)

Gillnet Fisheries													
Statistical Week	Dates	Unakwik Drift Gillnet			Coghill Drift Gillnet			Eshamy Drift and Set Gillnet			Gillnet Total	Purse Seine Total	PWS Total Catch
		Hours	Effort ^a	Catch	Hours	Effort ^a	Catch	Hours	Effort ^a	Catch			
24	06/10 – 06/16		Closed		24	142	87	136	195	414	501	0	501
25	06/17 – 06/23		Closed		48	244	1,650	168	267	2,182	3,832	0	3,832
26	06/24 – 06/30		Closed		48	297	4,509	168	303	5,301	9,810	594,432	604,242
27	07/01 – 07/07		Closed		24	155	812	168	195	1,483	2,295	3,693,230	3,695,525
28	07/08 – 07/14		Closed			Closed		168	161	4,686	4,686	1,291,363	1,296,049
29	07/15 – 07/21		Closed			Closed		34	31	462	462	1,302,575	1,303,037
30	07/22 – 07/28	24	3	145	24	184	32,267		Closed		32,412	1,110,214	1,142,626
31	07/29 – 08/04	60	1	24	60	287	196,859	168	60	64,271	261,154	5,237,337	5,498,491
32	08/05 – 08/11	108	1	2,857	108	289	636,961	168	45	100,836	740,654	7,429,630	8,170,284
33	08/12 – 08/18	56	2	3,705	60	242	387,209	168	42	190,193	581,107	6,492,343	7,073,450
34	08/19 – 08/25	20	2	3,255	168	233	416,856	168	27	118,722	538,833	5,333,924	5,872,757
35	08/26 – 09/01		Closed		168	184	172,554	168	18	46,401	218,955	455,619	674,574
36	09/02 – 09/08		Closed		168	220	53,171	168	0	0	53,171	23,466	76,637
37	09/09 – 09/15		Closed		168	95	4,572	168	0	0	4,572	0	4,572
38	09/16 – 09/22		Closed		168	40	3	168	0	0	3	0	3
39	09/23 – 09/29		Closed		168	3	0	168	0	0	0	0	0
40	09/30 – 10/06		Closed		84	1	0	84	0	0	0	0	0
Totals		268	5	9,986	1,488	403	1,907,510	1,682	365	534,951	2,452,447	32,964,133	35,416,580

^a Number of permits reporting catch.

Table 18. Estimated hatchery contributions of pink salmon to the commercial common property harvests, hatchery cost recovery harvests, hatchery brood stock escapements, and pink salmon total return to Prince William Sound, 1990.

Hatchery	1989 Release	Commercial Common Property Catch ^a	Cost Recovery Sales Harvest ^b	Brood Stock Escapement ^c	Total Return
Solomon Gulch ^d	128,400,000	6,908,361	2,146,469	200,000	9,254,830
Cannery Creek	59,100,000	2,132,453	552,498	288,840	2,973,791
Wally Noerenberg	159,900,000	10,492,000	3,364,172	436,022	14,292,194
Armin F. Koernig	161,900,000	5,636,918	2,669,519	272,767	8,579,204
Main Bay	10,500,000	N/A ^e	0	0	0
Total	519,800,000	25,169,732	8,732,658	1,197,629	35,100,019

^a Preliminary estimates based on recoveries of coded wire tags from hatchery released fish.

^b Does not include brood stock carcass sales. Data are from fish ticket information and may not match harvest data obtained from fish tickets presented elsewhere.

^c Includes holding mortalities, excess fish, and carcasses from fish used for brood stock that are also sold for cost recovery.

^d Includes Boulder Bay remote release.

^e Not Available

Table 19. Prince William Sound chum salmon weekly commercial common property catch and effort by district and gear type from final fish ticket summaries, 1990.

Purse Seine Fisheries																						
		Eastern District			Northern District			Coghill District			Northwestern District			Southwestern District			Montague District			Southeastern District		
Statistical Week	Dates	Hours	Effort*	Catch	Hours	Effort*	Catch	Hours	Effort*	Catch	Hours	Effort*	Catch	Hours	Effort*	Catch	Hours	Effort*	Catch	Hours	Effort*	Catch
24	06/10 - 06/16		Closed			Closed			Closed			Closed			Closed			Closed			Closed	
25	06/17 - 06/23		Closed			Closed			Closed			Closed			Closed			Closed			Closed	
26	06/24 - 06/30	12	177	22,700	12	37	28,329		Closed			Closed			Closed			Closed		12	0	0
27	07/01 - 07/07	48	243	11,031	24	8	581		Closed			Closed			Closed			Closed		24	0	0
28	07/08 - 07/14	24	246	16,410	24	23	2,828		Closed			Closed			Closed			Closed		24	0	0
29	07/15 - 07/21	24	218	12,767		Closed			Closed			Closed			Closed			Closed			Closed	
30	07/22 - 07/28	24	132	24,758	24	139	14,046	24	14	4,161		Closed		24	38	1,258		Closed			Closed	
31	07/29 - 08/04	48	24	10,922	48	104	13,904	60	22	3,462	60	23	2,492	60	192	12,686	60	0	0	60	1	212
32	08/05 - 08/11	108	30	5,521	108	110	12,777	108	19	2,768	108	25	1,701	108	168	6,073	108	3	3	108	0	0
33	08/12 - 08/18	80	37	42,772	80	88	2,310	60	9	105	60	7	288	60	191	3,547	60	0	0	60	1	0
34	08/19 - 08/25	72	19	6,463	72	80	668	104	38	345	56	16	110	92	223	4,271	92	0	0	92	0	0
35	08/26 - 09/01		Closed			Closed		168	31	99		Closed		36	92	139		Closed			Closed	
36	09/02 - 09/08		Closed			Closed		168	10	11		Closed			Closed			Closed			Closed	
37	09/09 - 09/15		Closed			Closed		168	0	0		Closed			Closed			Closed			Closed	
38	09/16 - 09/22		Closed			Closed		168	0	0		Closed			Closed			Closed			Closed	
39	09/23 - 09/29		Closed			Closed		168	0	0		Closed			Closed			Closed			Closed	
40	09/30 - 10/06		Closed			Closed		82	0	0		Closed			Closed			Closed			Closed	
Totals		440	259	153,344	392	220	75,443	1,278	89	10,951	284	43	4,591	380	248	27,974	320	3	3	320	2	212

-Continued-

Table 19. (page 2 of 2)

		Gillnet Fisheries									Gillnet Total	Purse Seine Total	PWS Total Catch
Statistical Week	Dates	Unakwik Drift Gillnet			Coghill Drift Gillnet			Eshamy Drift & Set Gillnet					
		Hours	Effort*	Catch	Hours	Effort*	Catch	Hours	Effort*	Catch			
24	06/10 – 06/16		Closed		24	142	28,084	136	195	118,863	146,947	0	146,947
25	06/17 – 06/23		Closed		48	244	109,639	168	267	59,481	169,120	0	169,120
26	06/24 – 06/30		Closed		48	297	63,287	168	303	80,251	143,538	51,029	194,567
27	07/01 – 07/07		Closed		24	155	21,390	168	195	53,453	74,843	11,612	86,455
28	07/08 – 07/14		Closed			Closed		168	161	35,119	35,119	19,238	54,357
29	07/15 – 07/21		Closed			Closed		34	31	1,861	1,861	12,767	14,628
30	07/22 – 07/28	24	3	12	24	184	23,385		Closed		23,397	44,223	67,620
31	07/29 – 08/04	60	1	0	60	287	28,487	168	60	9,052	37,539	43,678	81,217
32	08/05 – 08/11	108	1	8	108	289	20,245	168	45	928	21,181	28,843	50,024
33	08/12 – 08/18	56	2	1	60	242	3,720	168	42	181	3,902	49,022	52,924
34	08/19 – 08/25	20	2	2	168	233	2,174	168	27	68	2,244	11,857	14,101
35	08/26 – 09/01		Closed		168	184	442	168	18	9	451	238	689
36	09/02 – 09/08		Closed		168	220	270	168	0	0	270	11	281
37	09/09 – 09/15		Closed		168	95	59	168	0	0	59	0	59
38	09/16 – 09/22		Closed		168	40	27	168	0	0	27	0	27
39	09/23 – 09/29		Closed		168	3	0	168	0	0	0	0	0
40	09/30 – 10/06		Closed		84	1	0	84	0	0	0	0	0
Totals		268	5	23	1,488	403	301,209	1,682	365	359,266	660,498	272,518	933,016

^a Number of permits reporting catch.

Table 20. Estimated age composition of chum salmon in Prince William Sound commercial common property gillnet and purse seine catches, 1990.

Gear Type or Fishery	District	Statistical Area	Sample Size	Commercial Common Property Catch	Percentage of Catch by Brood Year and Age Group			
					1987	1986	1985	1984
					0.2	0.3	0.4	0.5
Purse Seine	Eastern	221	1,012	153,344	0.2	20.6	77.2	2.0
	Northern	222	643	75,443	0.3	26.7	71.2	1.8
	Southwestern	226	229	27,974	2.1	31.7	66.1	0.0
	Purse Seine Total		1,884	256,761	0.4	27.1	70.9	1.6
Drift Gillnet	Coghill ^a	223	2,114	312,160	0.4	42.6	56.1	0.9
Drift and Set Gillnet	Eshamy	225	2,176	359,266	0.5	69.1	29.7	0.7
	Gillnet Total		4,290	671,426	0.4	56.6	42.3	0.7
Fisheries Total			6,174	928,187	0.4	44.7	53.7	1.1

^a Includes some catches from commercial common property purse seines.

Table 21. Estimated hatchery contributions of chum salmon to the commercial common property harvests, hatchery cost recovery harvests, hatchery brood stock escapements, and chum salmon total run to Prince William Sound, 1990.

Hatchery	Commercial Common Property Catch ^a	Cost Recovery Sales Harvest ^b	Brood Stock Escapement ^c	Total Run
Solomon Gulch	2,589	1,085	1,686	5,360
Cannery Creek	0	0	0	0
Wally Noerenberg	N/A ^d	23,024	106,089	129,113
Armin F. Koernig	0	445	0	445
Main Bay	165,308	0	0	165,308
Total	167,897	24,554	107,775	300,226

^a Preliminary estimates based on recoveries of coded wire tags from hatchery released fish.

^b Does not include brood stock carcass sales. Data are from fish ticket information.

^c Includes holding mortalities, excess fish, and carcasses from fish used for brood stock that are also sold for cost recovery.

^d Not Available

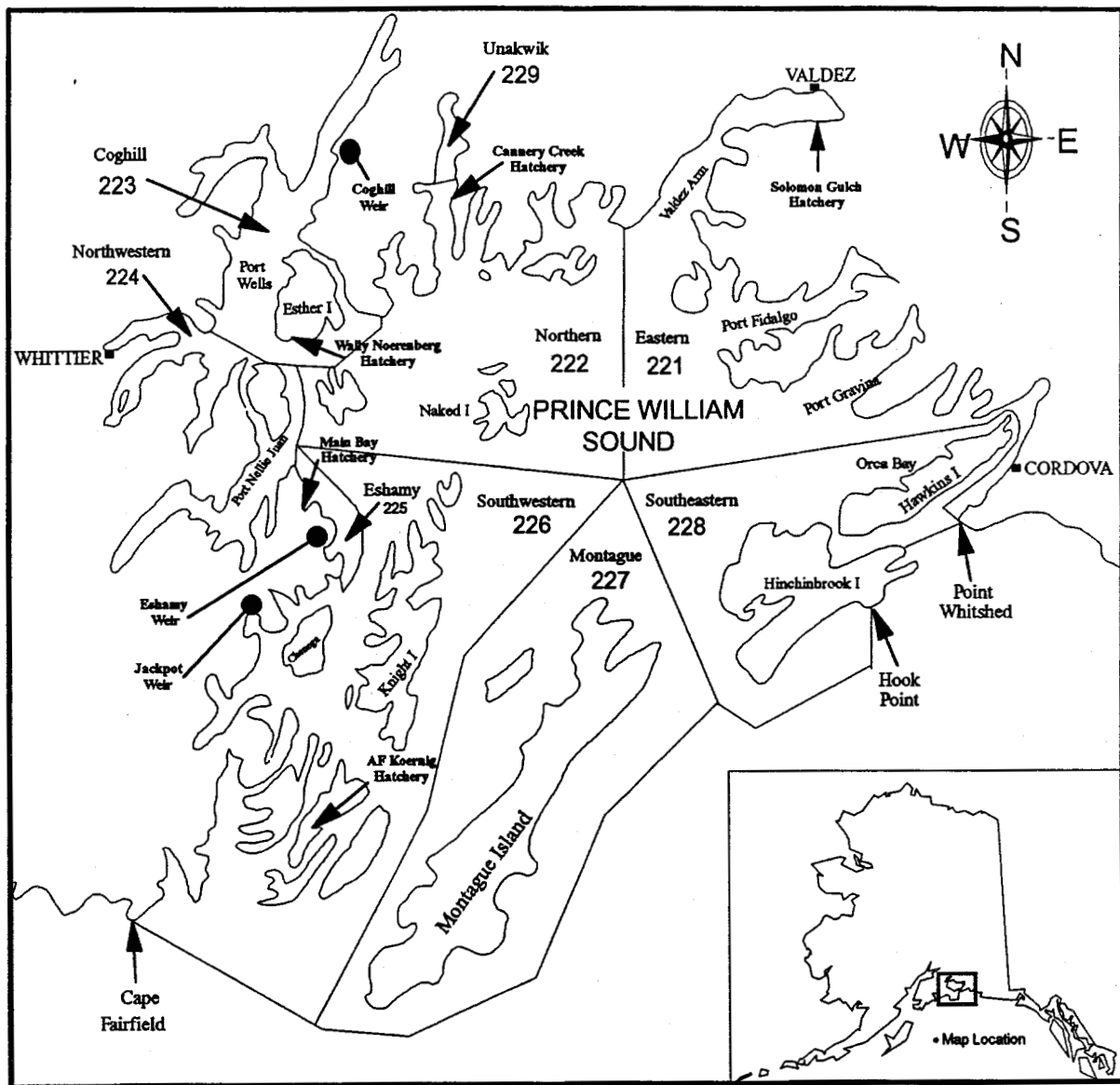


Figure 1. Prince William Sound area showing commercial fishing districts, hatcheries, and weir locations.

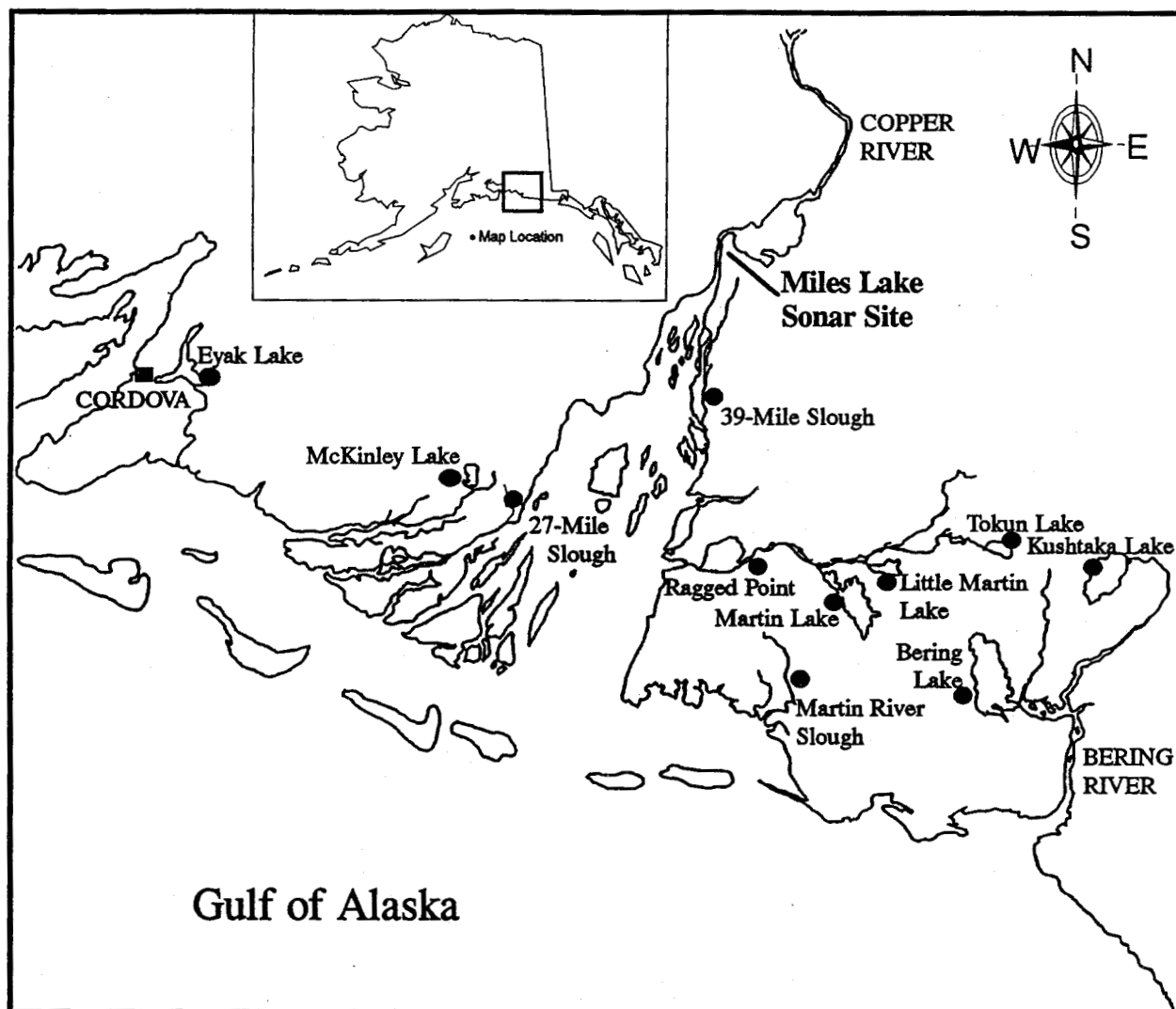


Figure 2. The Copper/Bering River area and the major coastal spawning areas which contribute to the commercial salmon fisheries.

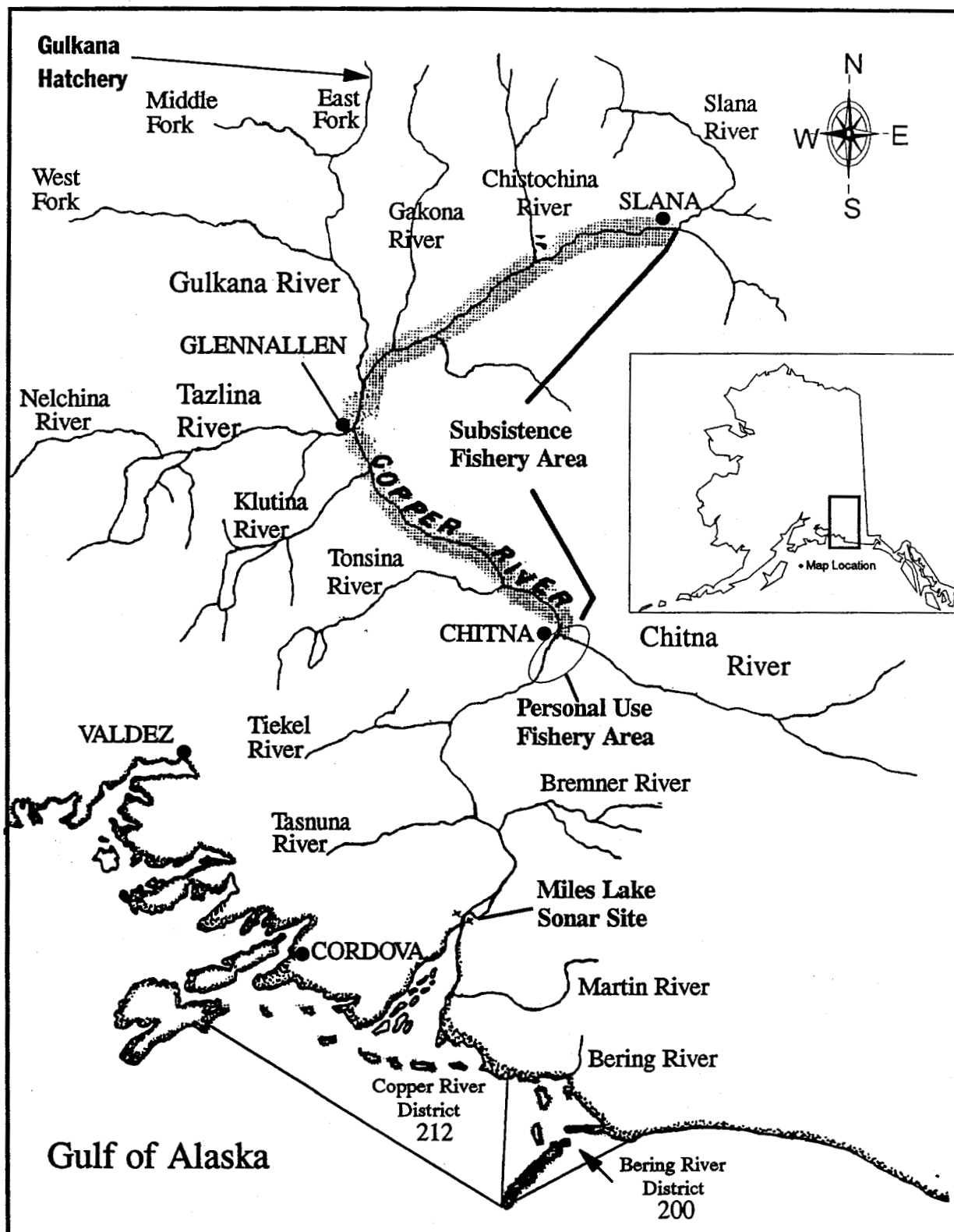


Figure 3. The location of the personal use fishery near Chitna and the subsistence fishery which extends from Chitna to Slana along the upper Copper River.

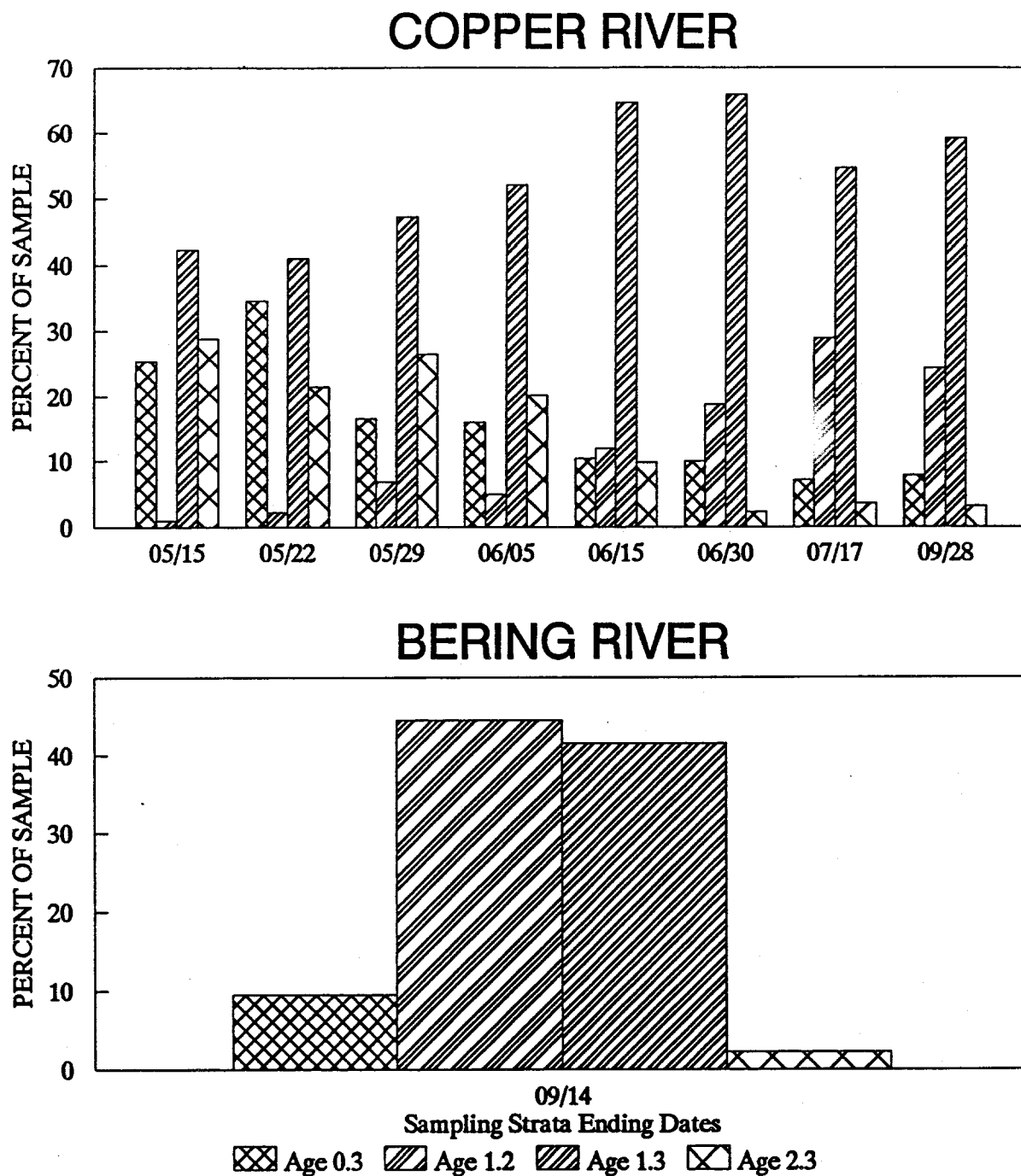


Figure 5. Temporally stratified age composition of sockeye salmon from the commercial common property drift gillnet fisheries in the Copper and Bering River Districts, 1990.

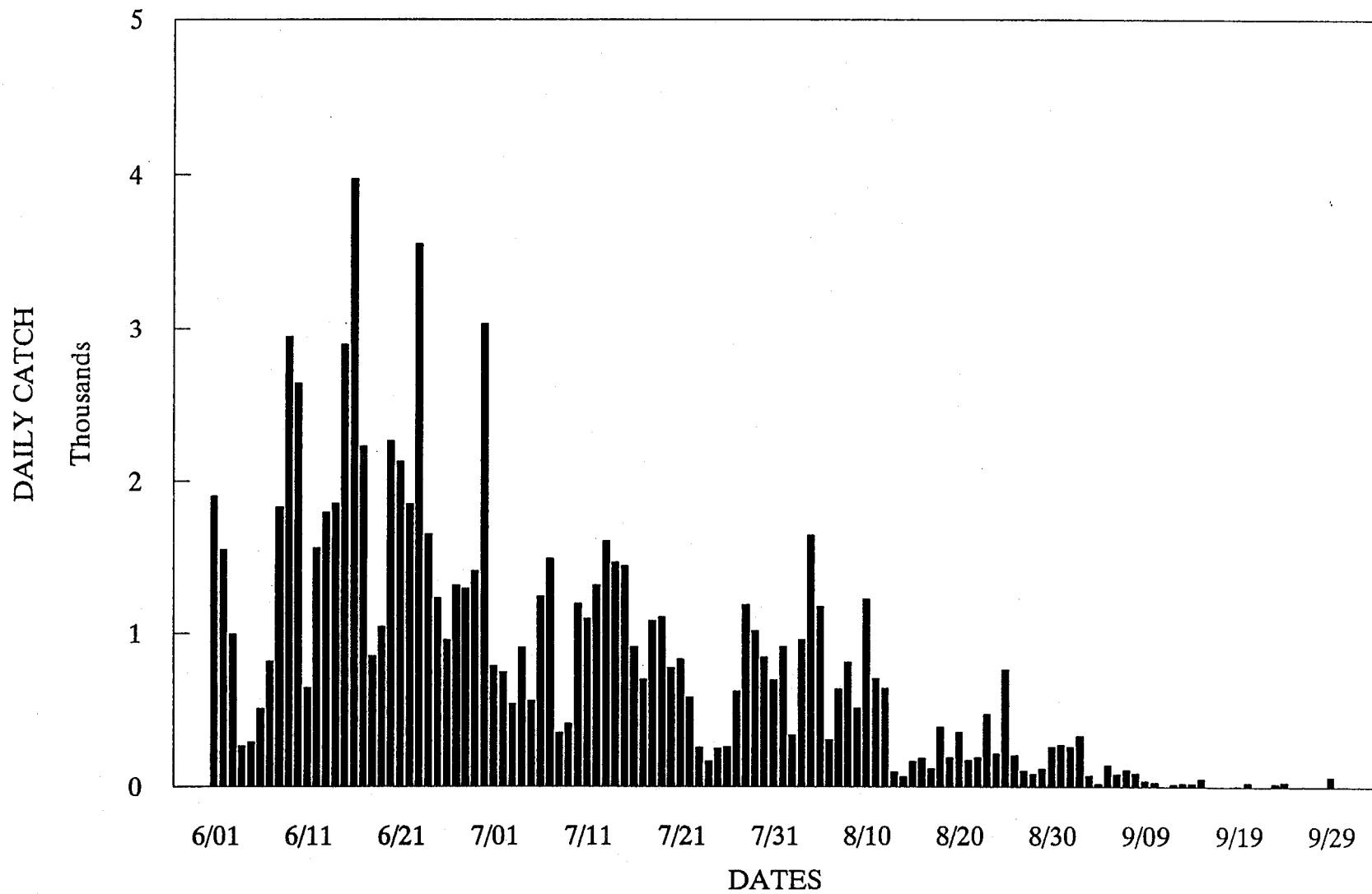


Figure 6. Daily sockeye salmon catch in the combined subsistence and personal use fisheries of the upper Copper River, 1990.

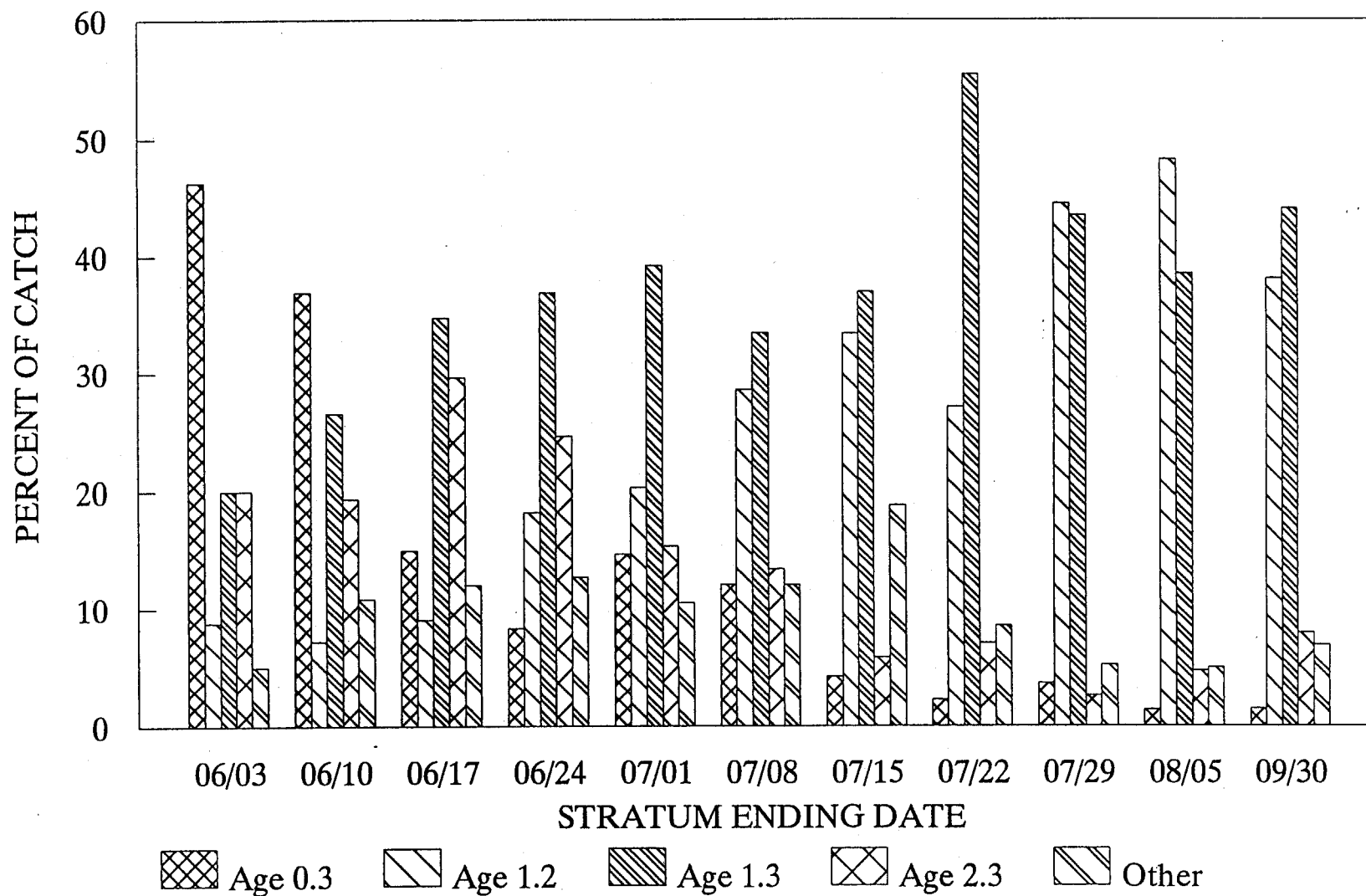


Figure 7. Temporally stratified age composition of the sockeye salmon catch from the combined subsistence and personal use fisheries on the upper Copper River, 1990.

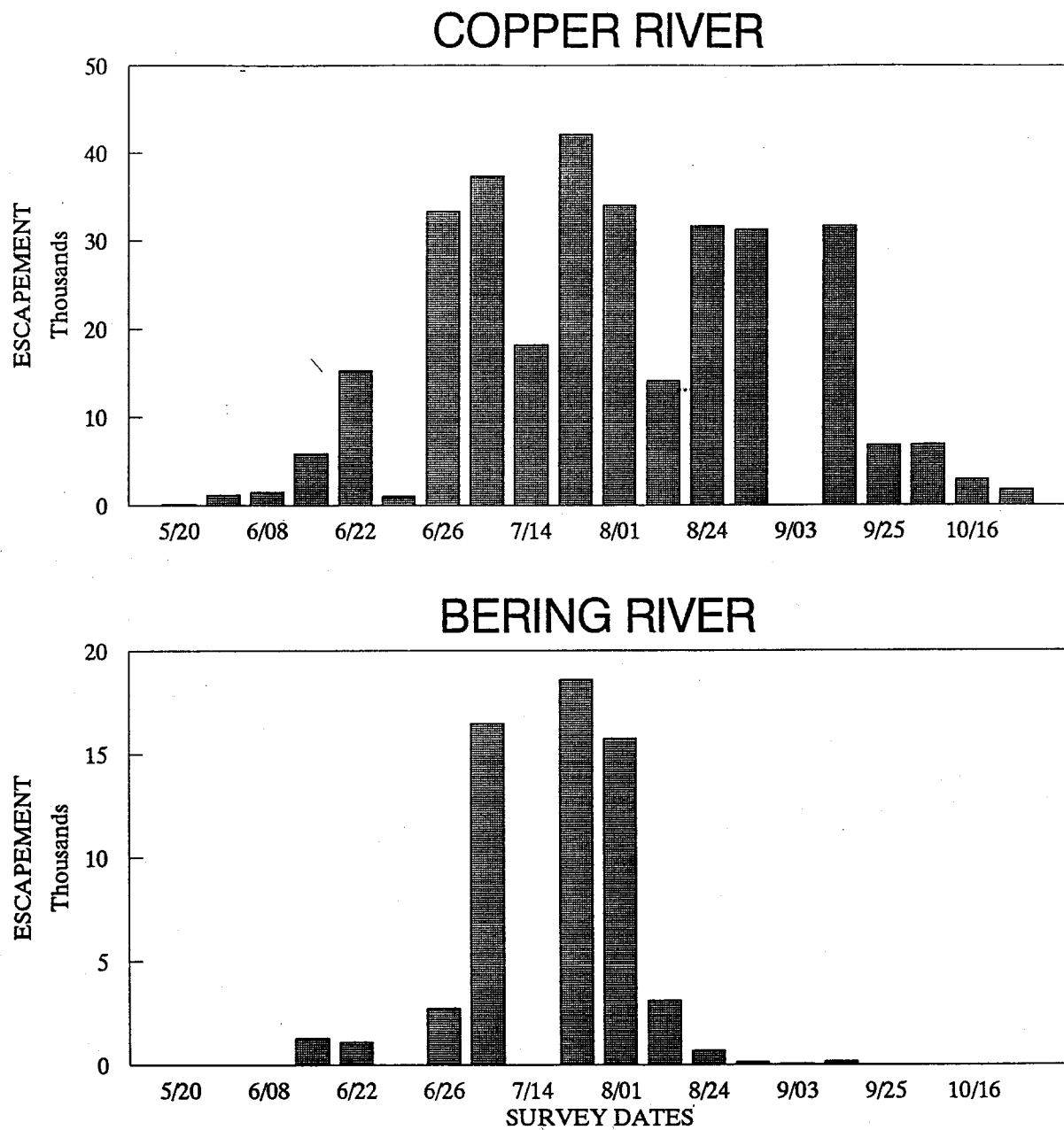


Figure 8. Sockeye salmon aerial escapement indices for the Copper River delta and Bering River drainage by survey date, 1990.

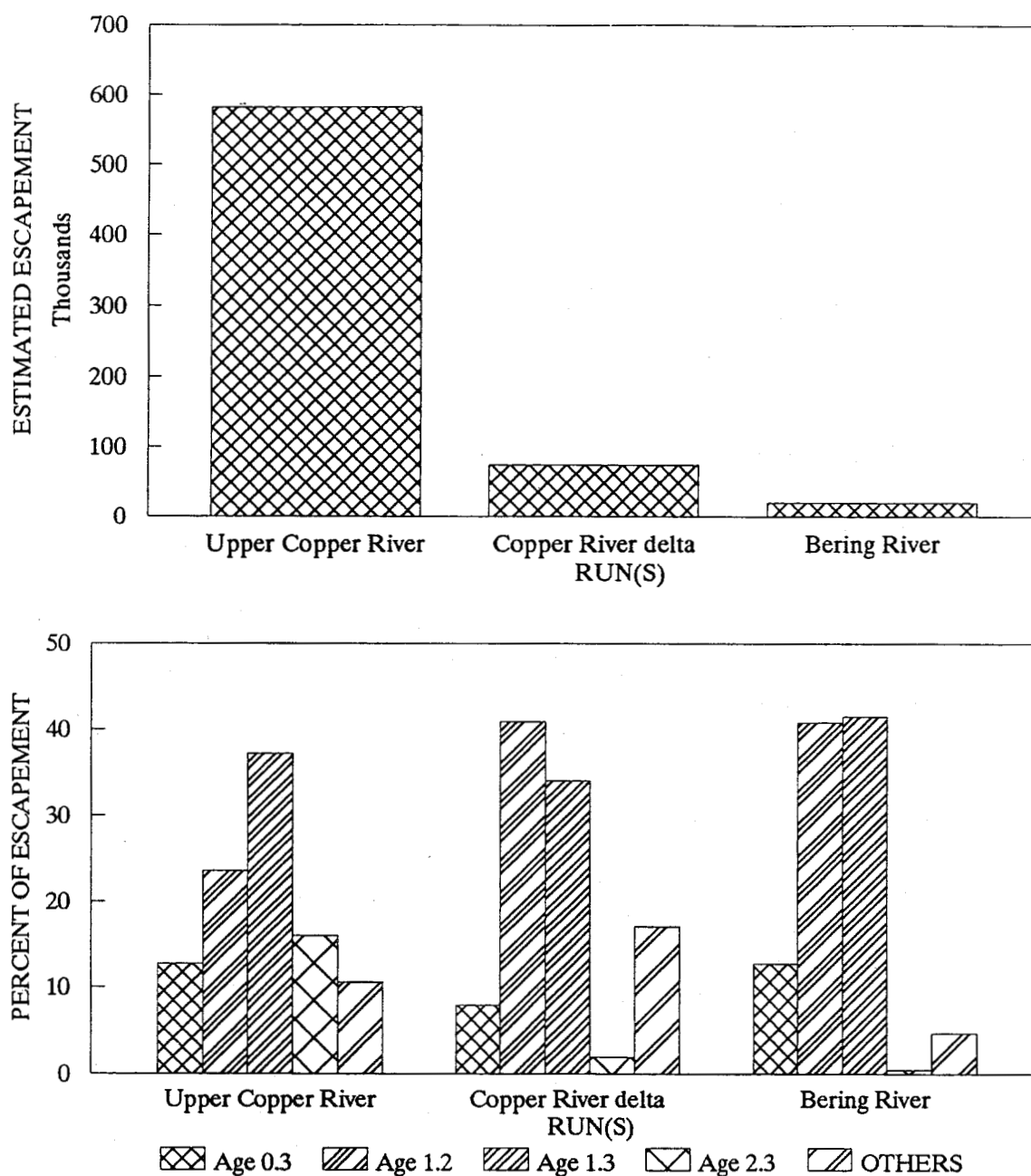


Figure 9. Estimated escapement of sockeye salmon to the upper Copper River, Copper River delta, and Bering River, and the estimated age composition of the escapements, 1990.

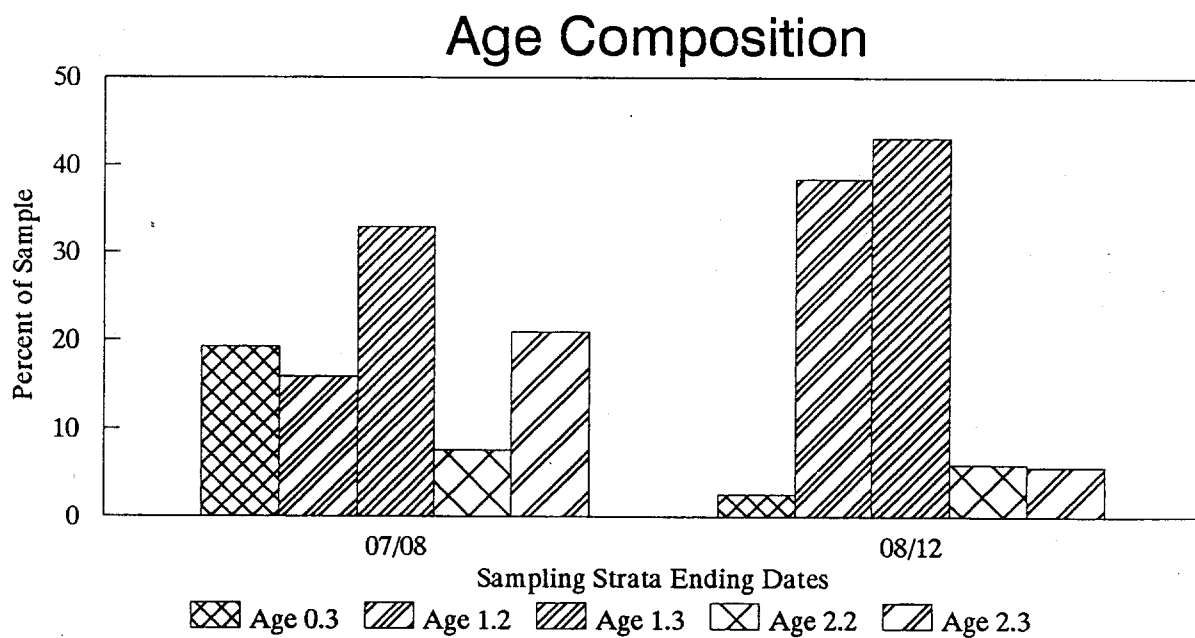
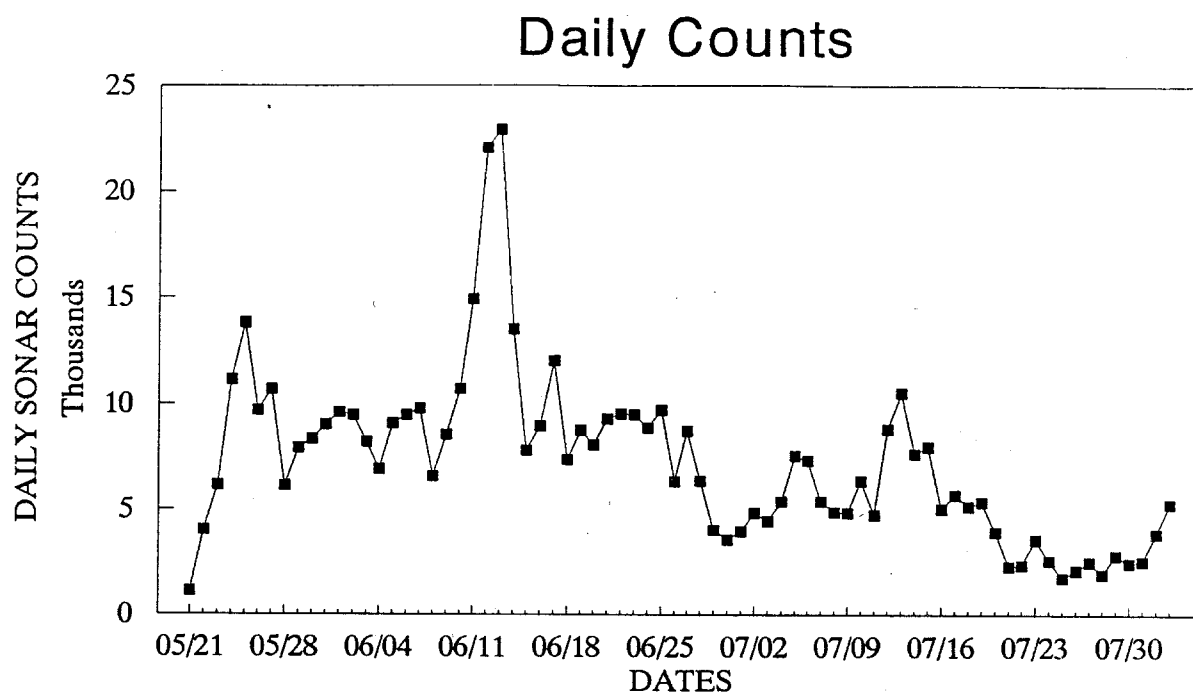


Figure 10. Daily counts of sockeye salmon escapements past the Miles Lake sonar and their estimated age composition from fish sampled in the personal use and subsistence fisheries near Chitina, 1990

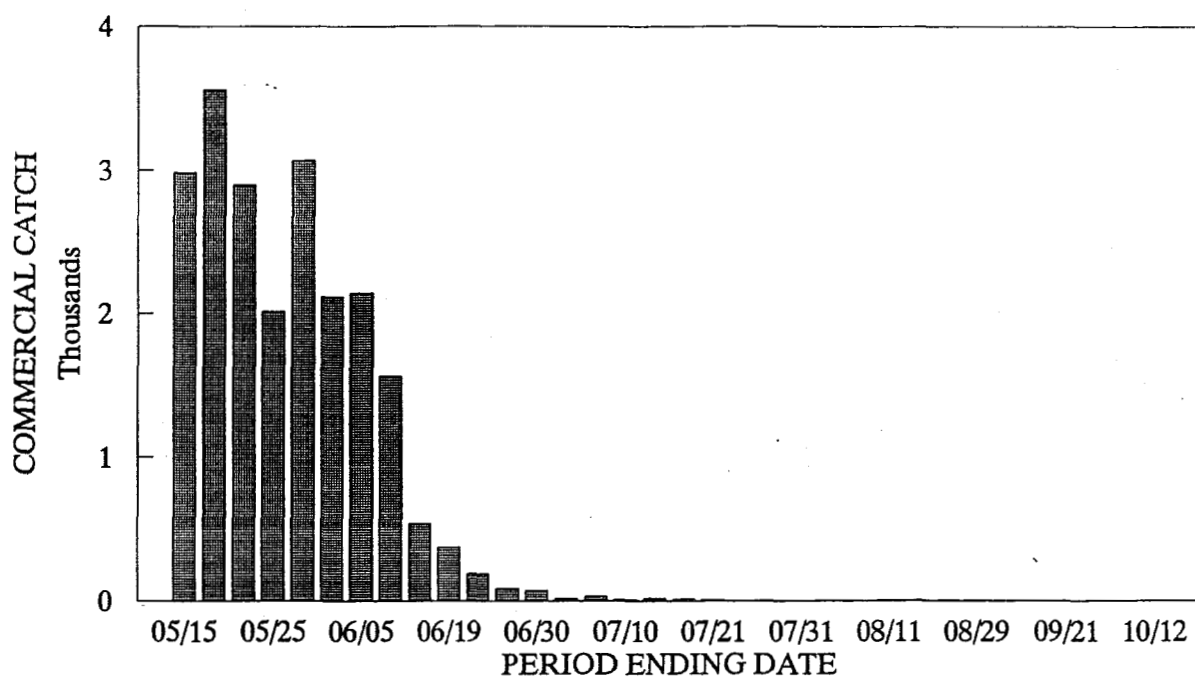


Figure 11. Chinook salmon catches from the commercial common property drift gillnet fishery of the Copper River District by period, 1990.

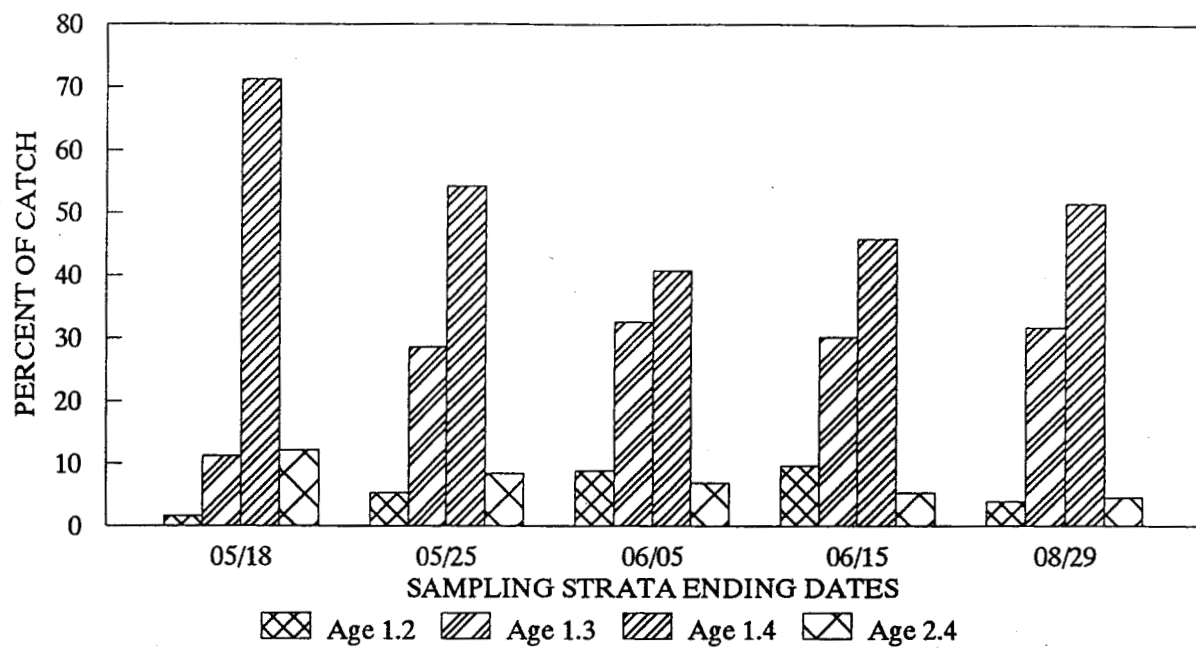


Figure 12. Temporally stratified age composition of chinook salmon from the commercial common property drift gillnet fishery in the Copper River District, 1990.

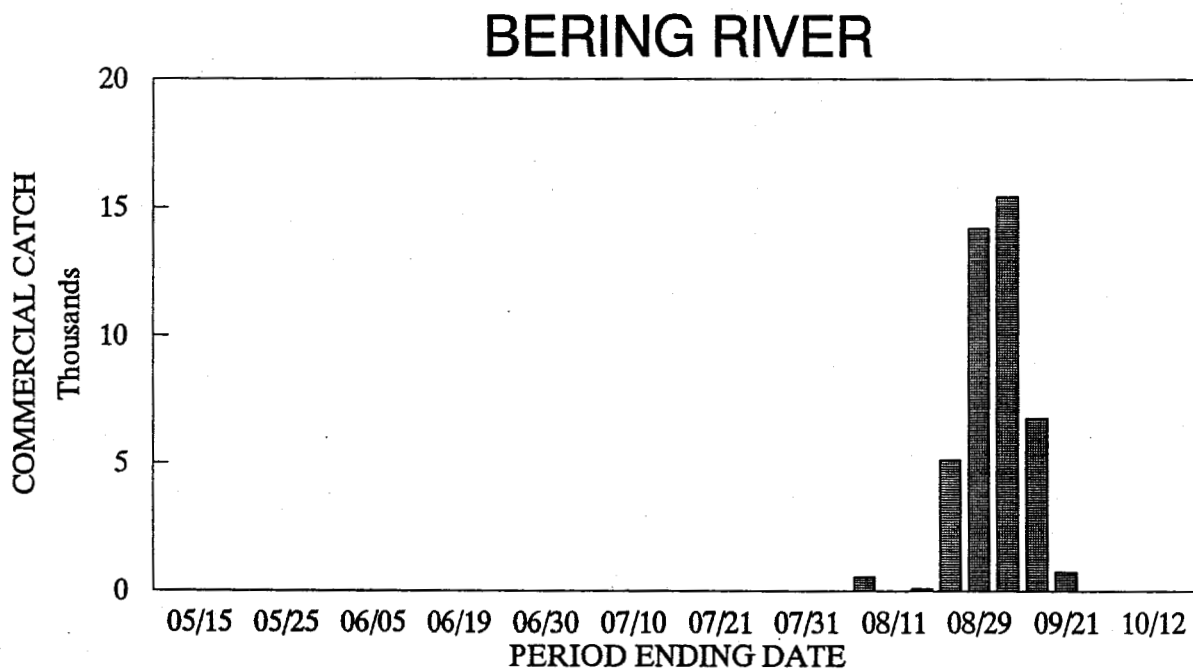
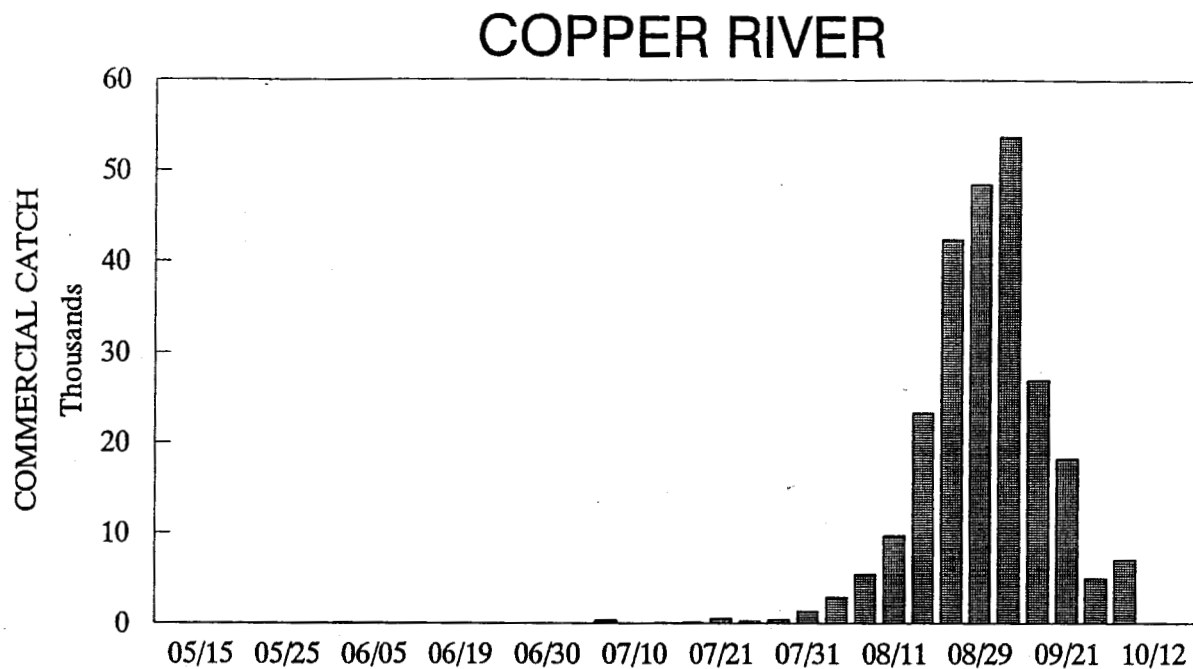


Figure 13. Coho salmon catches from the commercial common property drift gillnet fisheries of the Copper and Bering River Districts by period, 1990.

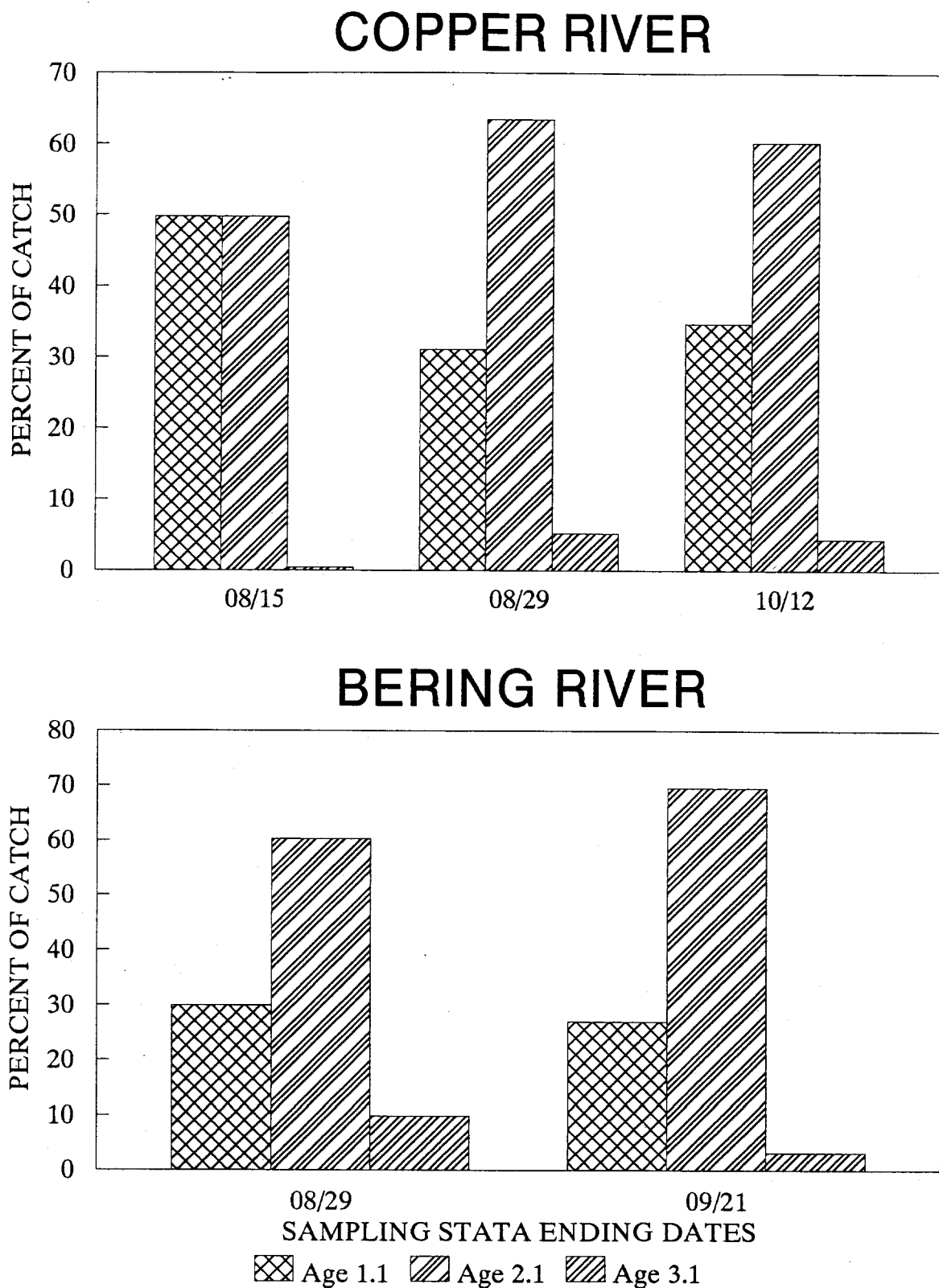


Figure 14. Temporally stratified age composition of coho salmon from the commercial common property drift gillnet fisheries in the Copper and Bering River Districts, 1990.

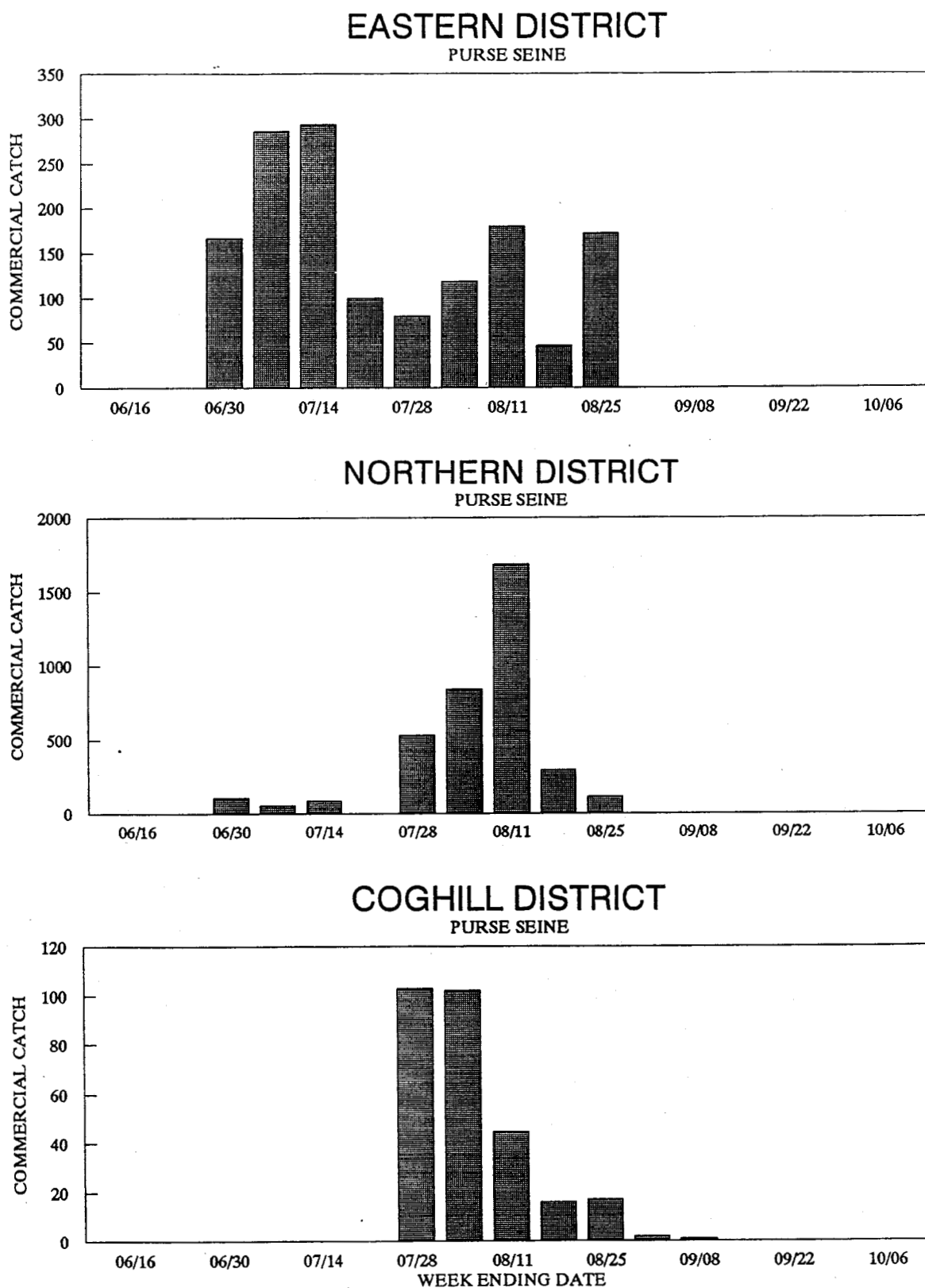


Figure 15. Weekly sockeye salmon catches from the major commercial common property purse seine, drift gillnet, and set gillnet fisheries in Prince William Sound, 1990.

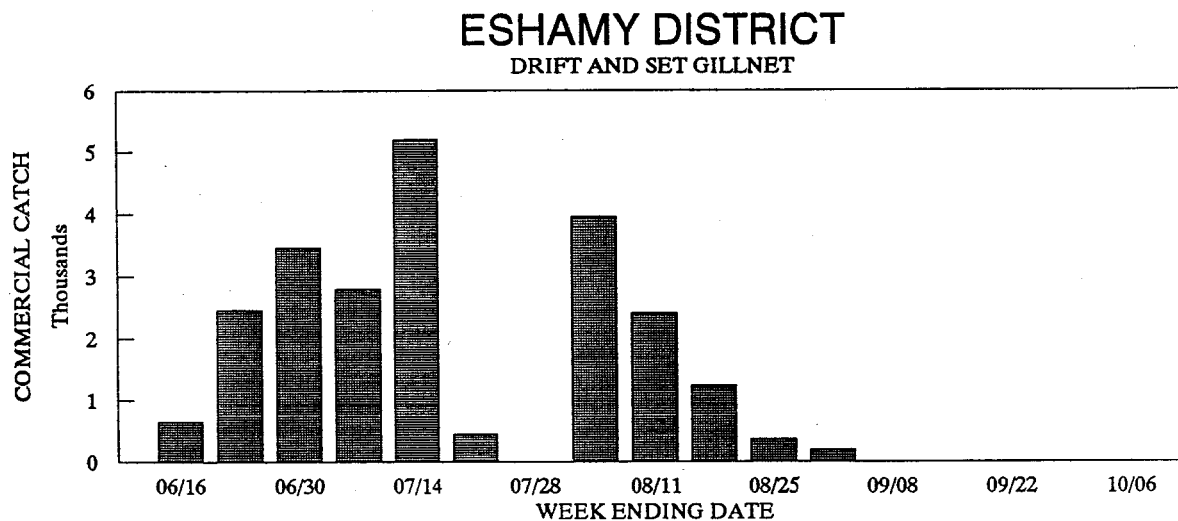
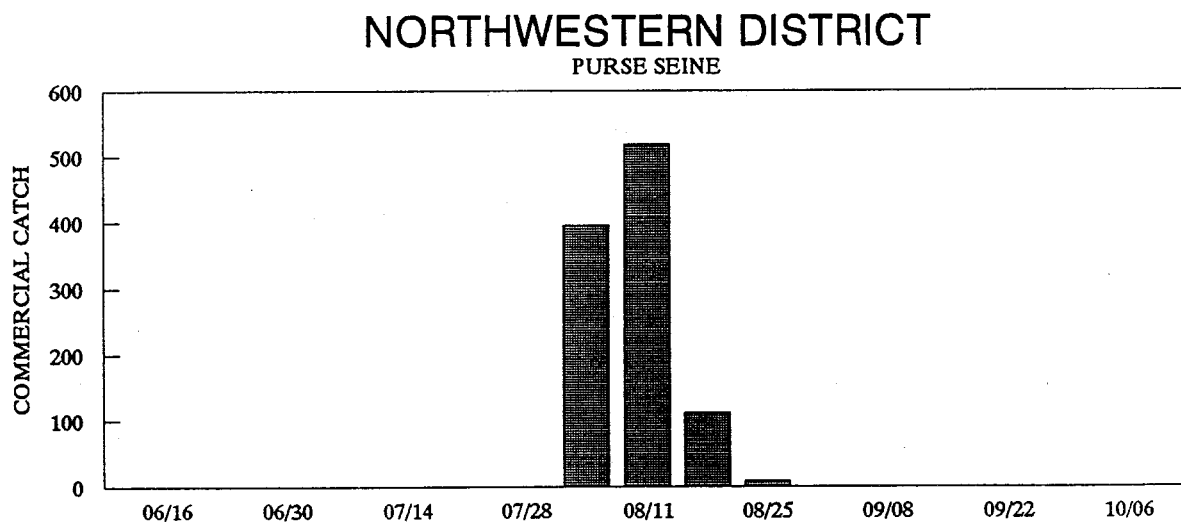
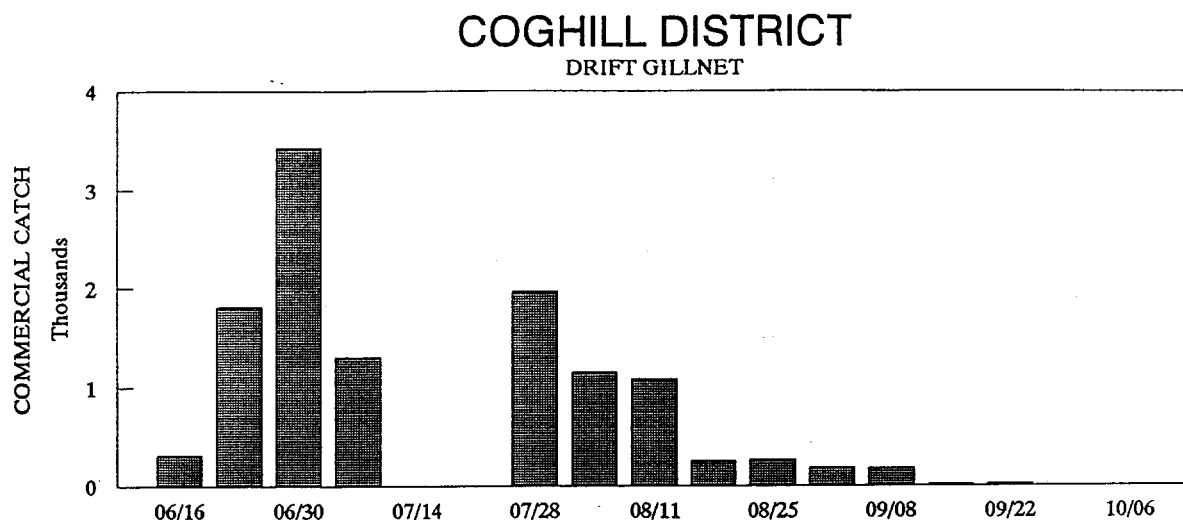


Figure 15. (pg. 2 of 3)

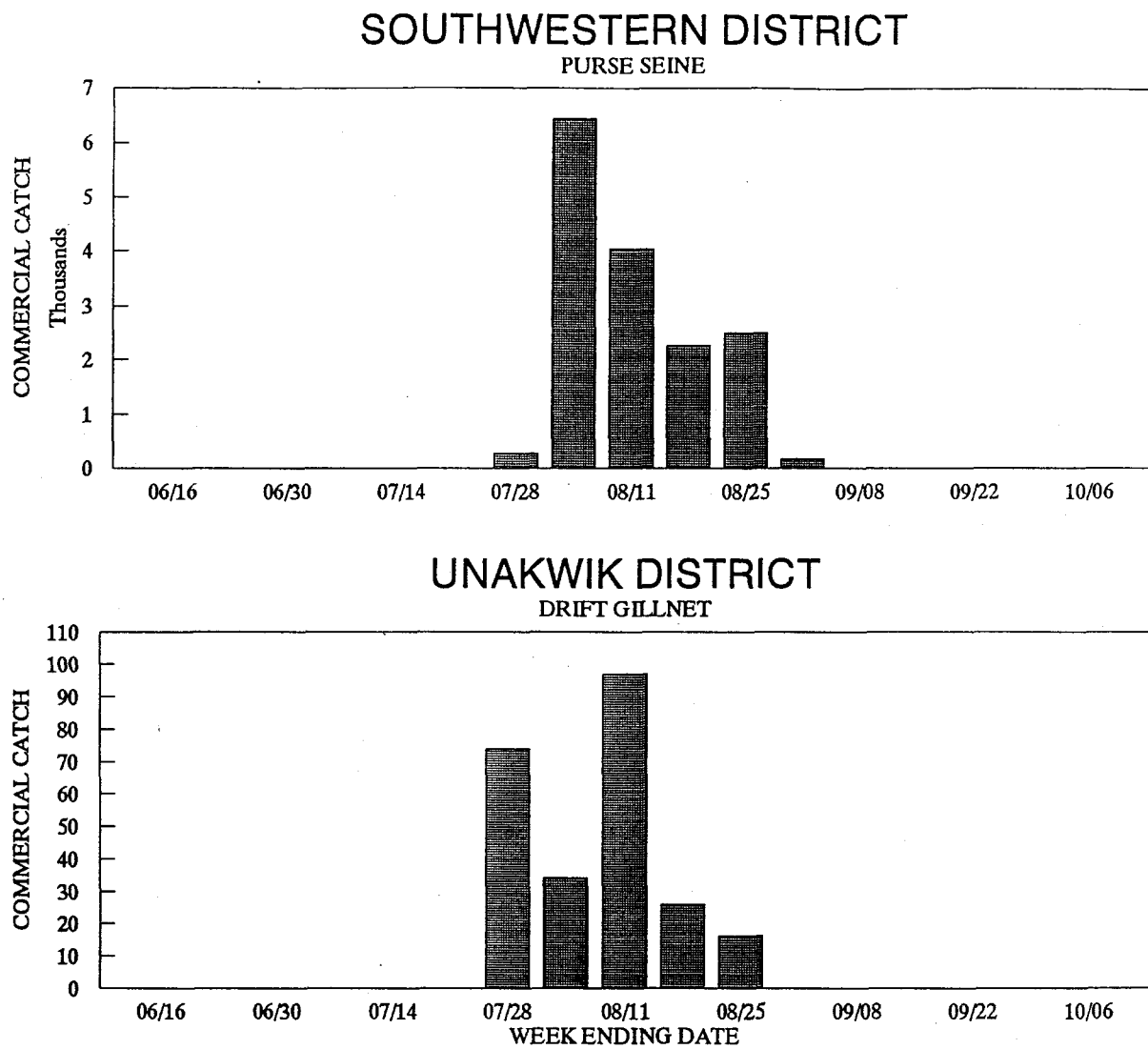


Figure 15. (pg. 3 of 3)

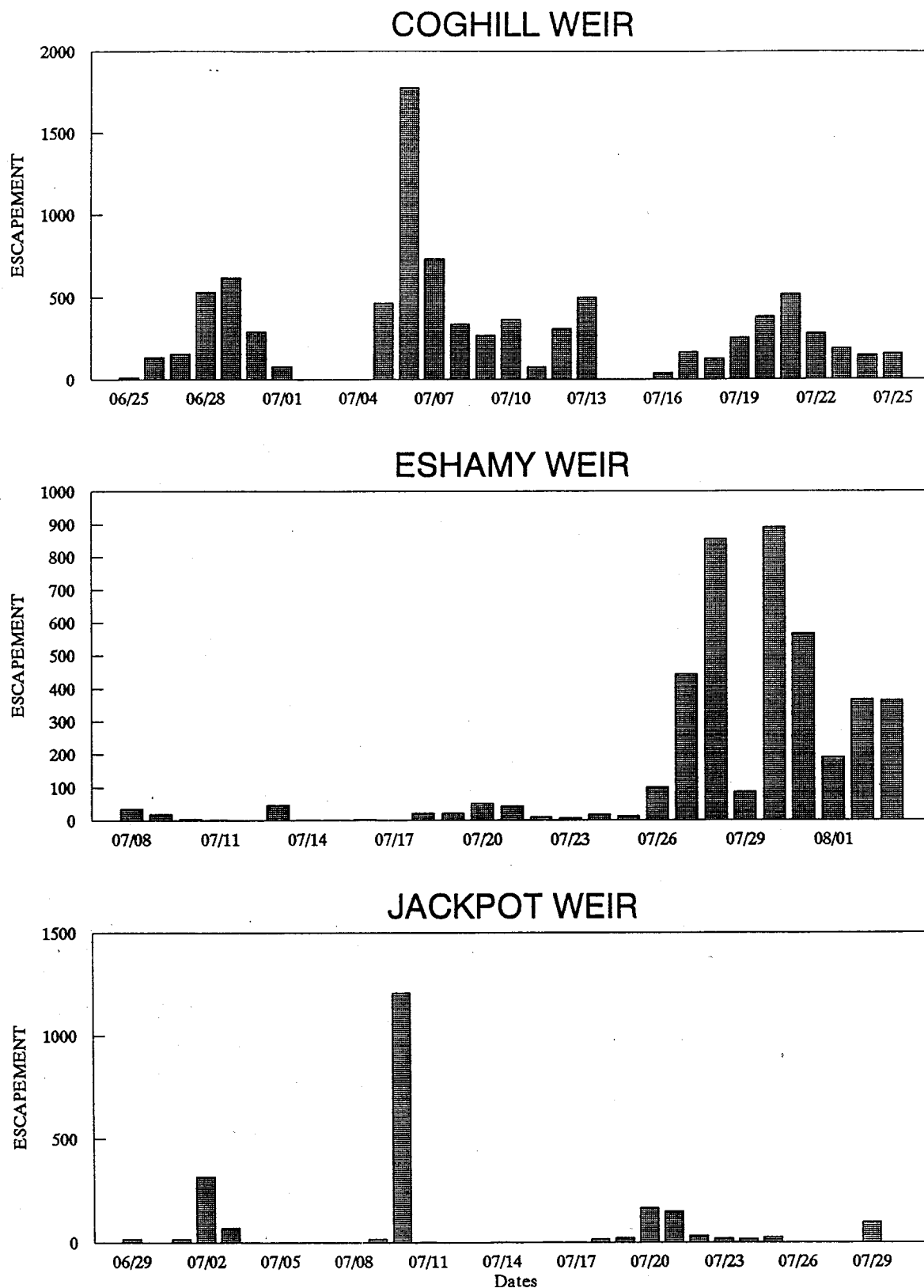


Figure 16. Daily sockeye salmon escapement through the weirs at the outlets of Coghill, Eshamy, and Jackpot Lakes, Prince William Sound, 1990.

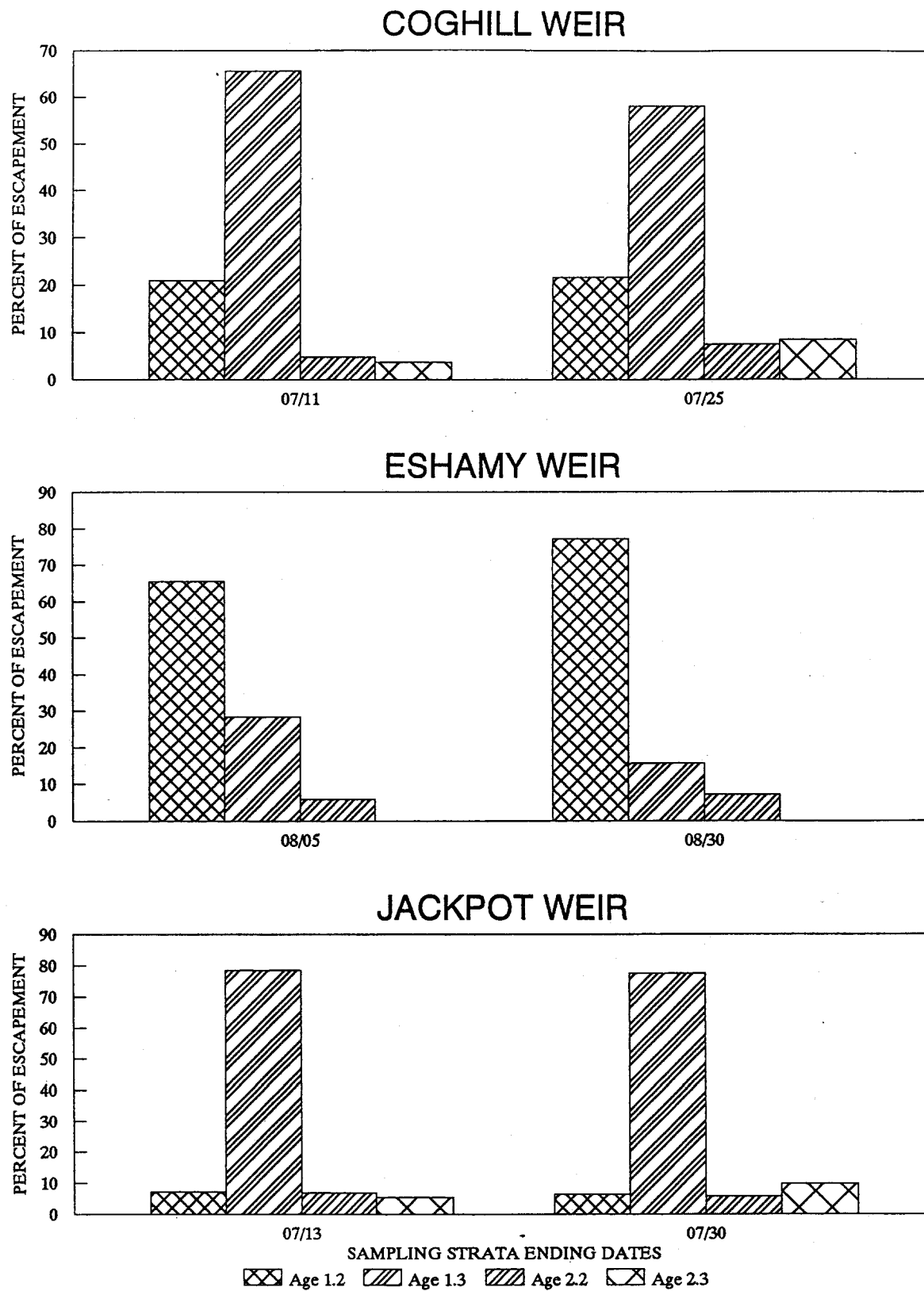


Figure 17. Temporally stratified age composition of sockeye salmon escapement through the weirs at the outlets of Coghill, Eshamy, and Jackpot Lakes, Prince William Sound, 1990.

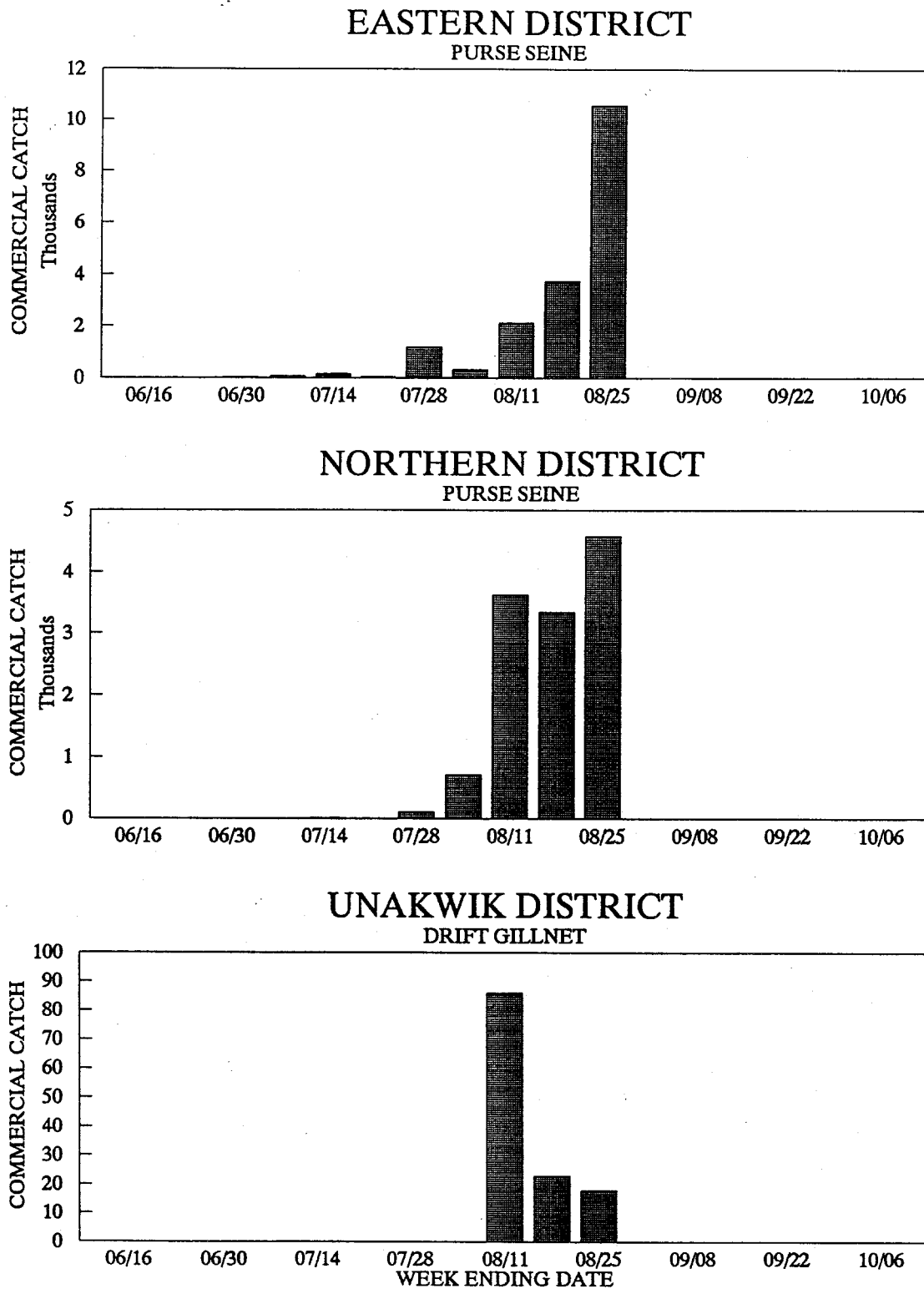


Figure 18. Weekly coho salmon commercial common property catches from the major purse seine, drift gillnet, and set gillnet fisheries in Prince William Sound, 1990.

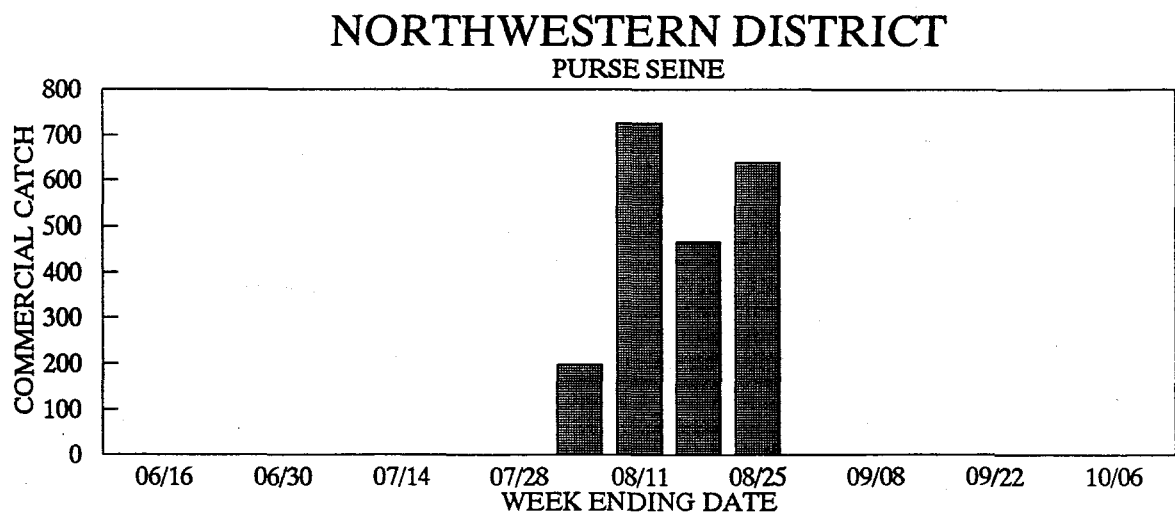
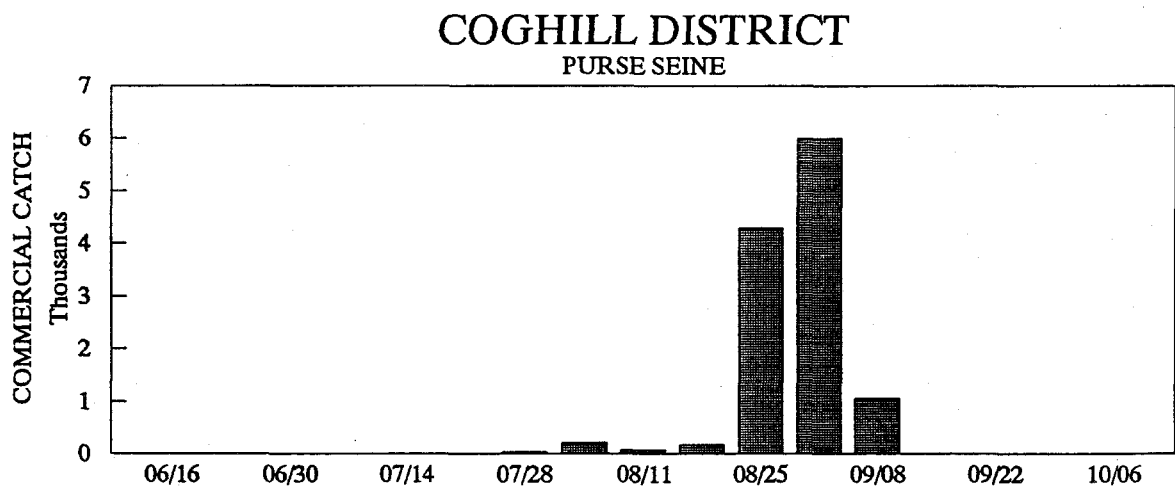
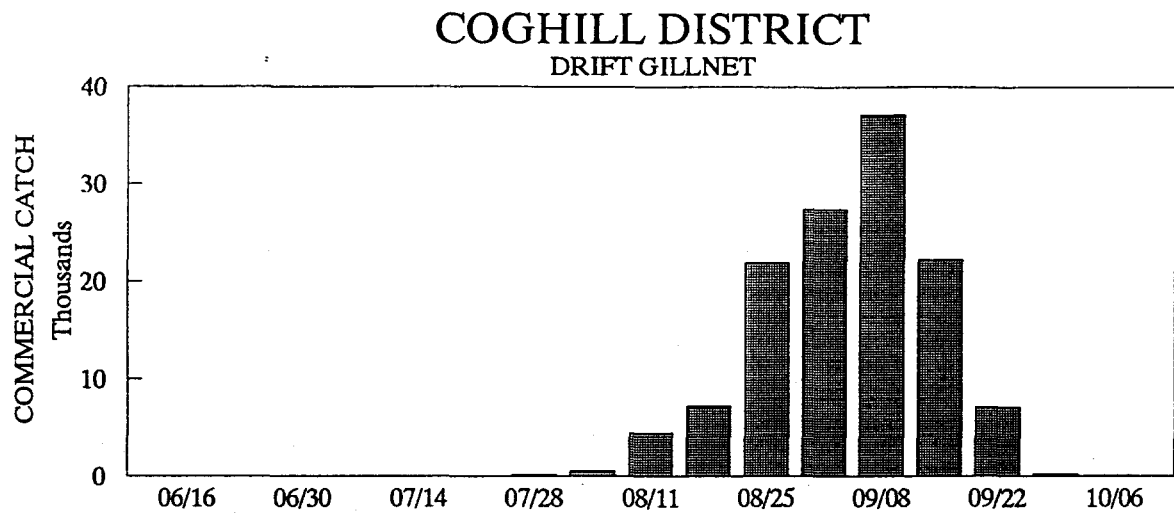


Figure 18. (pg. 2 of 3)

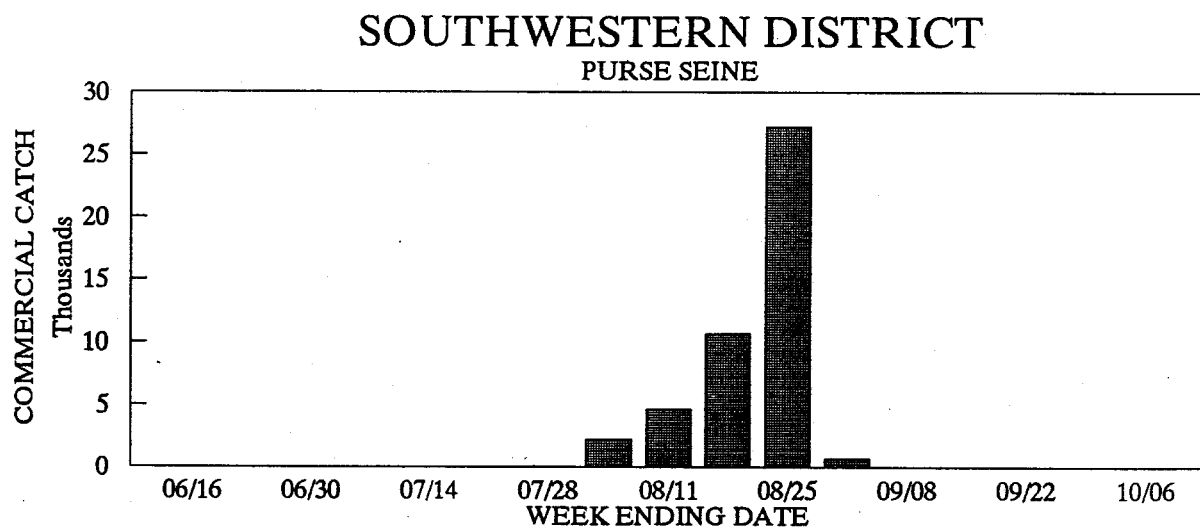
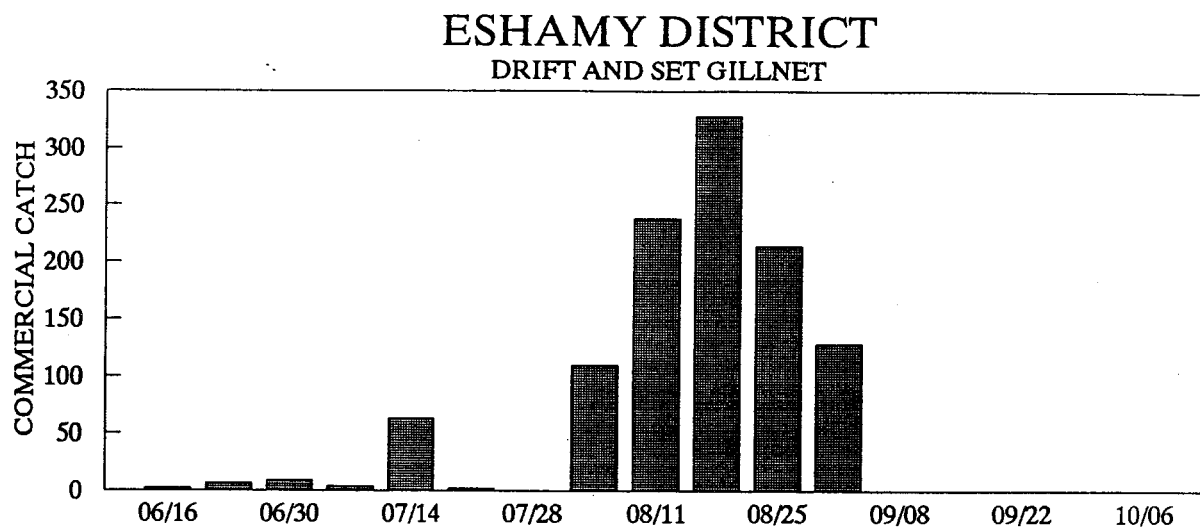


Figure 18. (pg. 3 of 3)

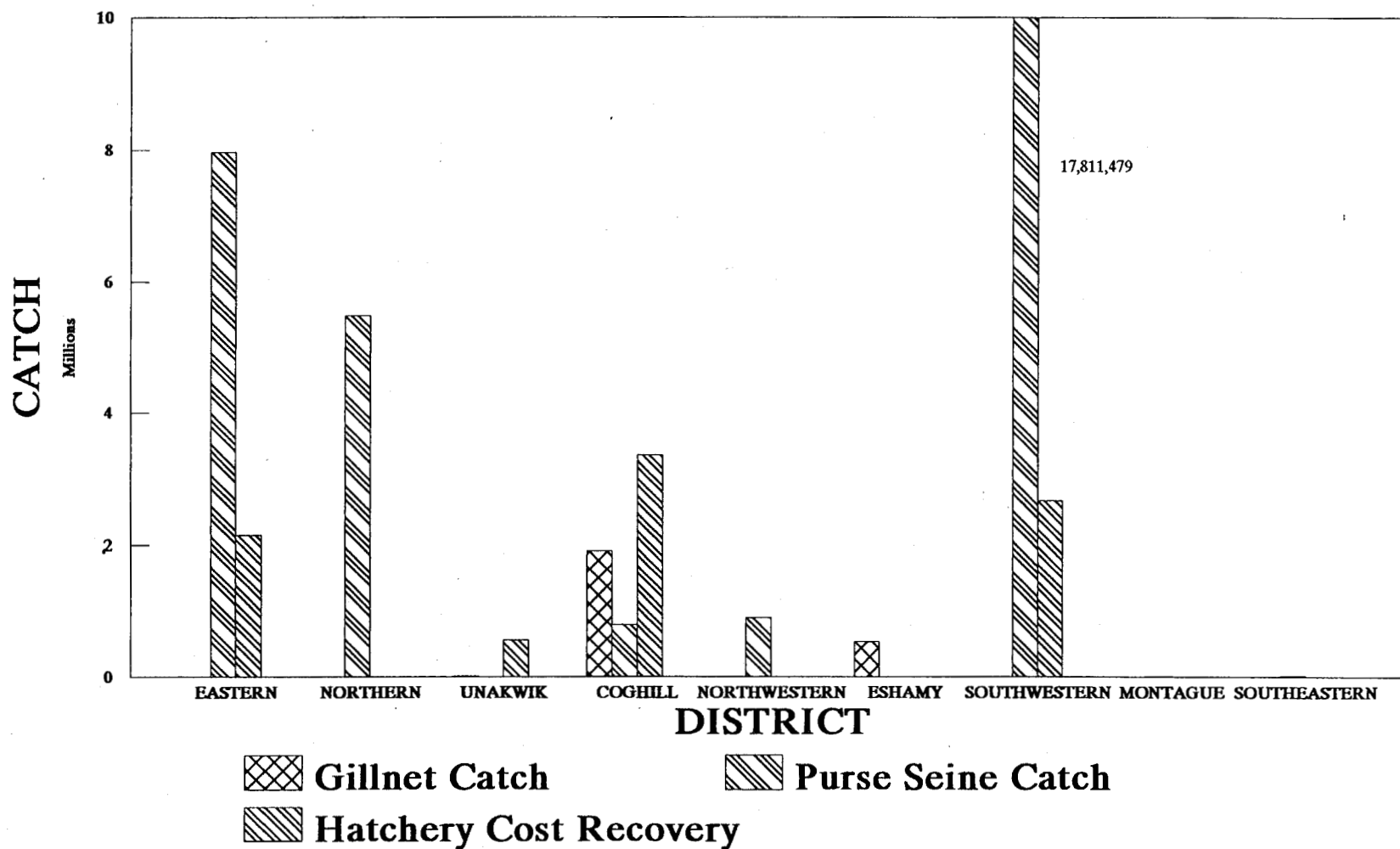


Figure 19. Pink salmon commercial common property gillnet and purse seine harvest and hatchery cost recovery harvest for Prince William Sound by district, 1990.

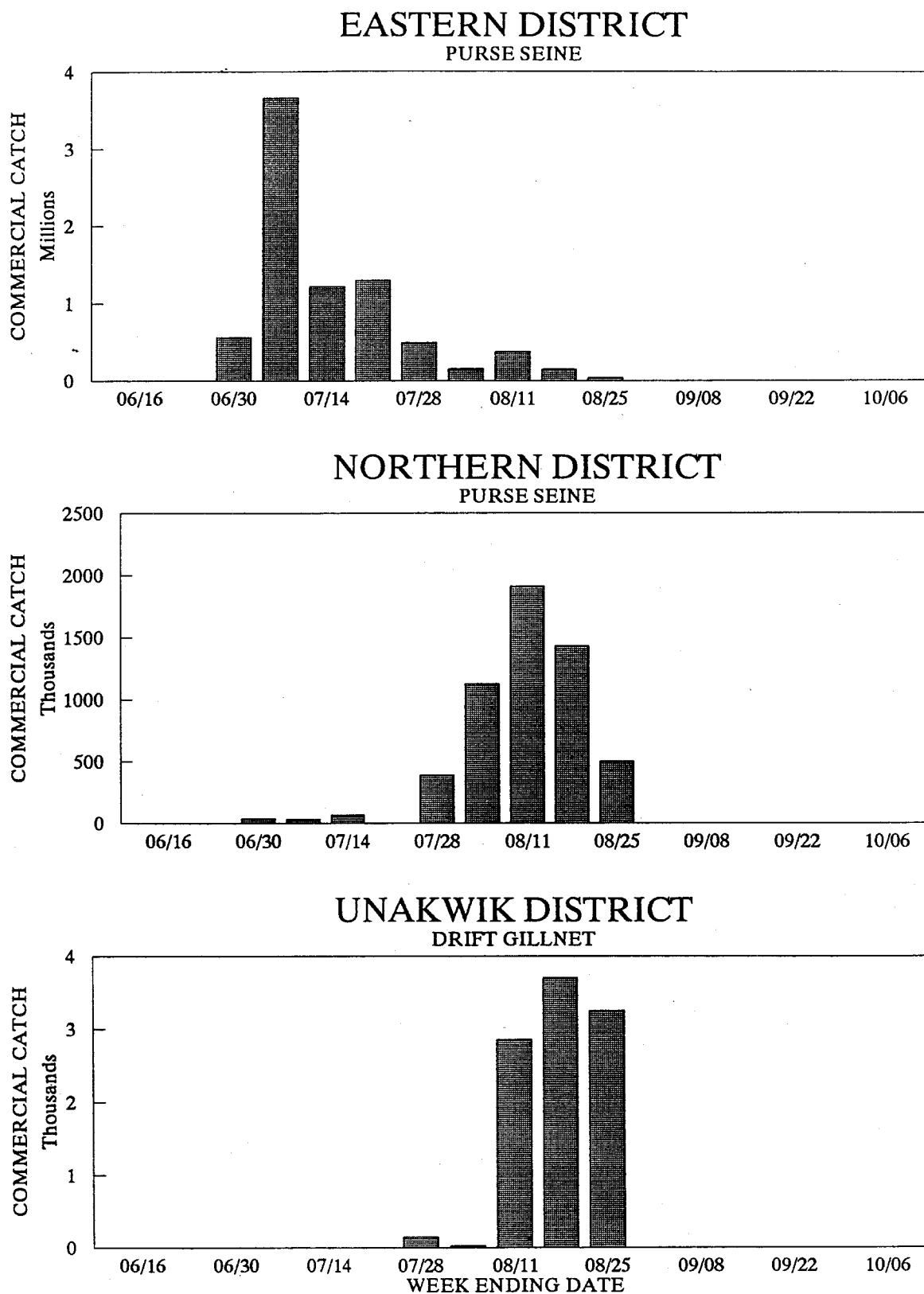


Figure 20. Weekly pink salmon catches from the major commercial common property purse seine, drift gillnet, and set gillnet fisheries in Prince William Sound, 1990.

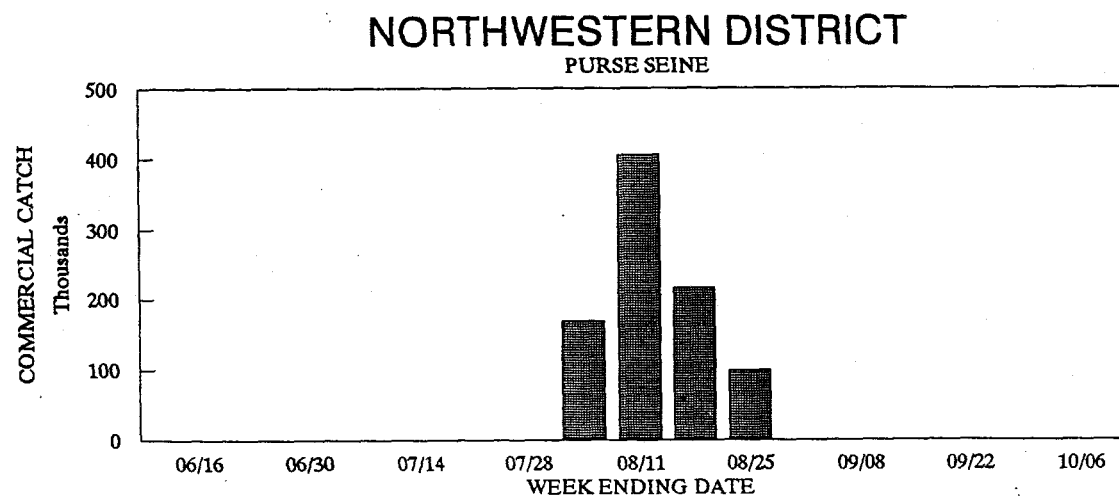
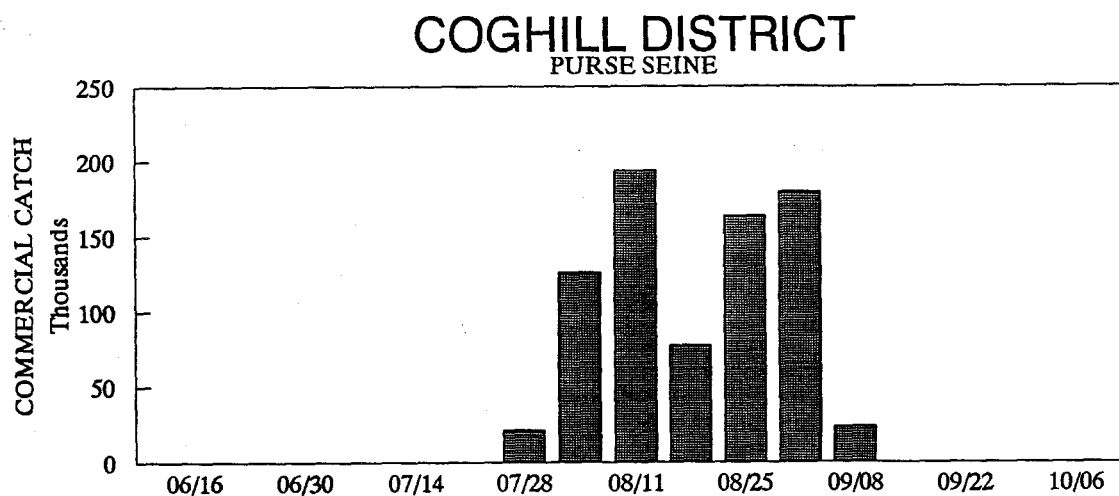
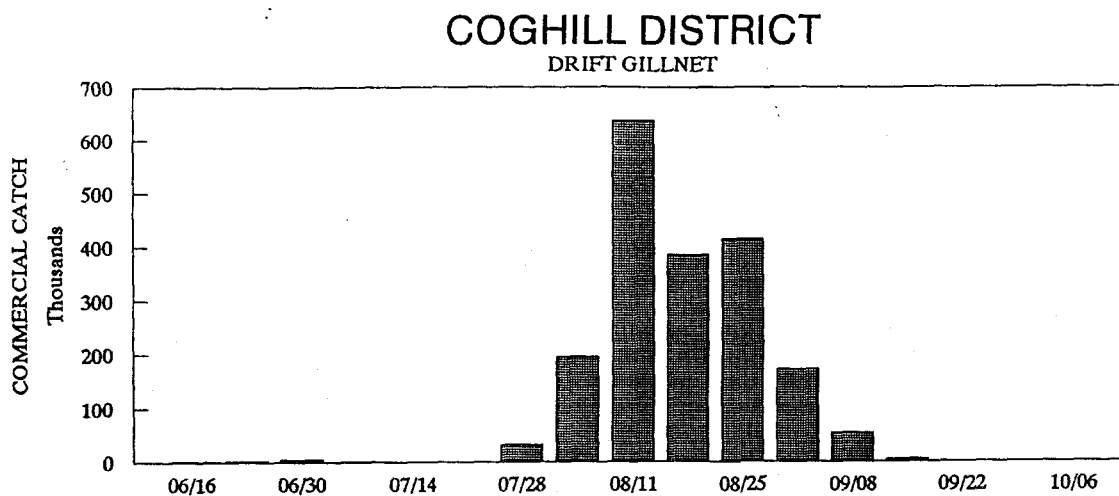


Figure 20. (pg. 2 of 4)

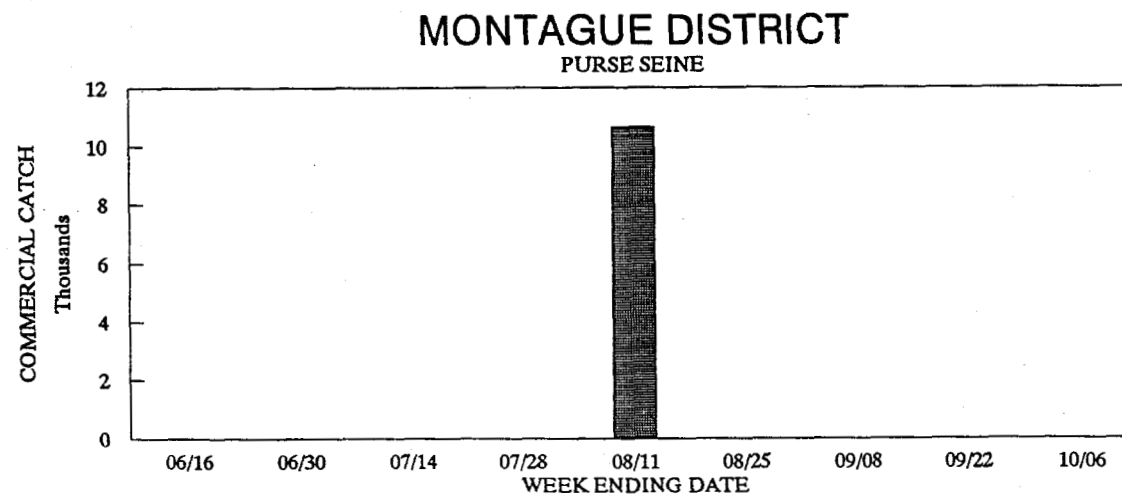
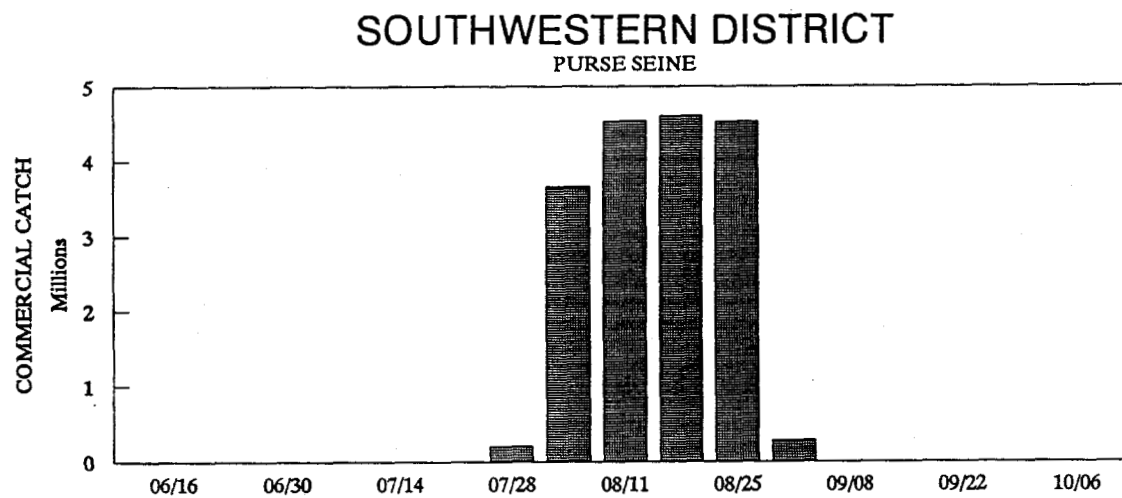
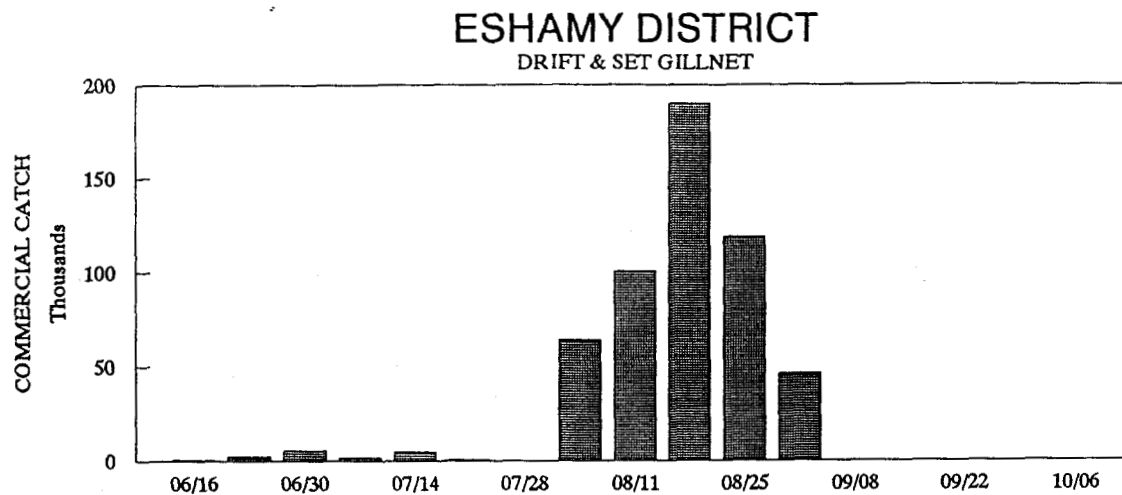


Figure 20. (pg. 3 of 4)

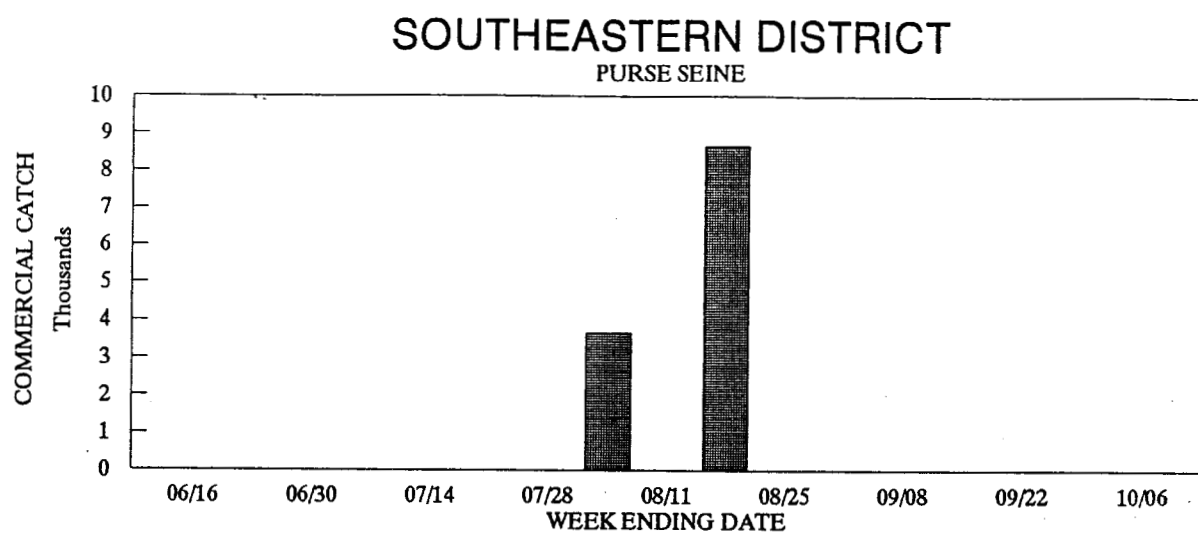


Figure 20. (pg. 4 of 4)

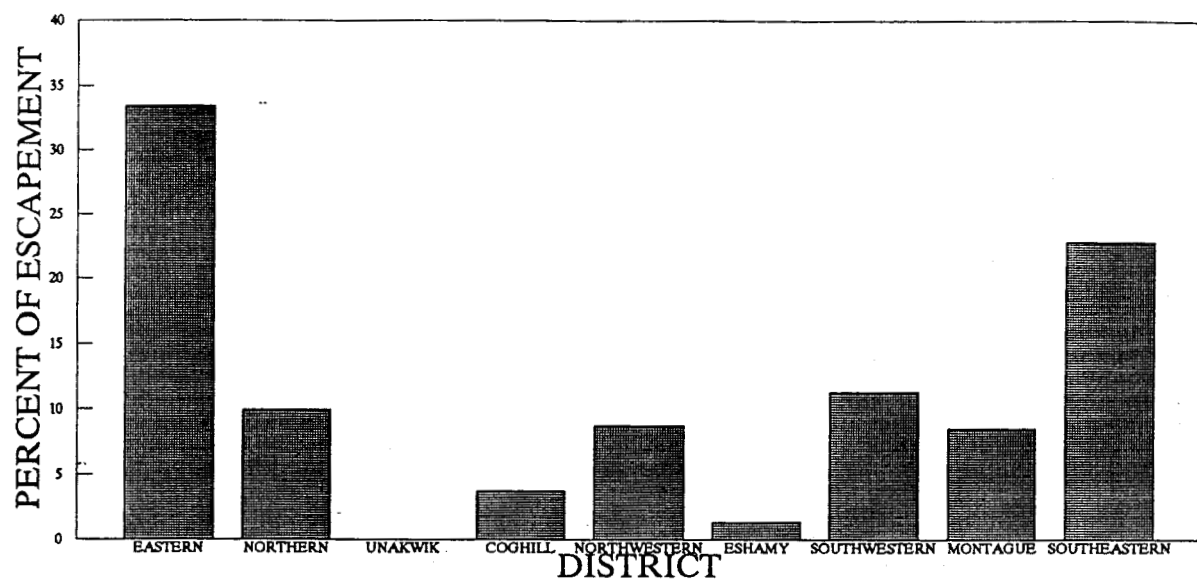


Figure 21. Percentage of the total wild pink salmon aerial escapement estimate by district in Prince William Sound, 1990.

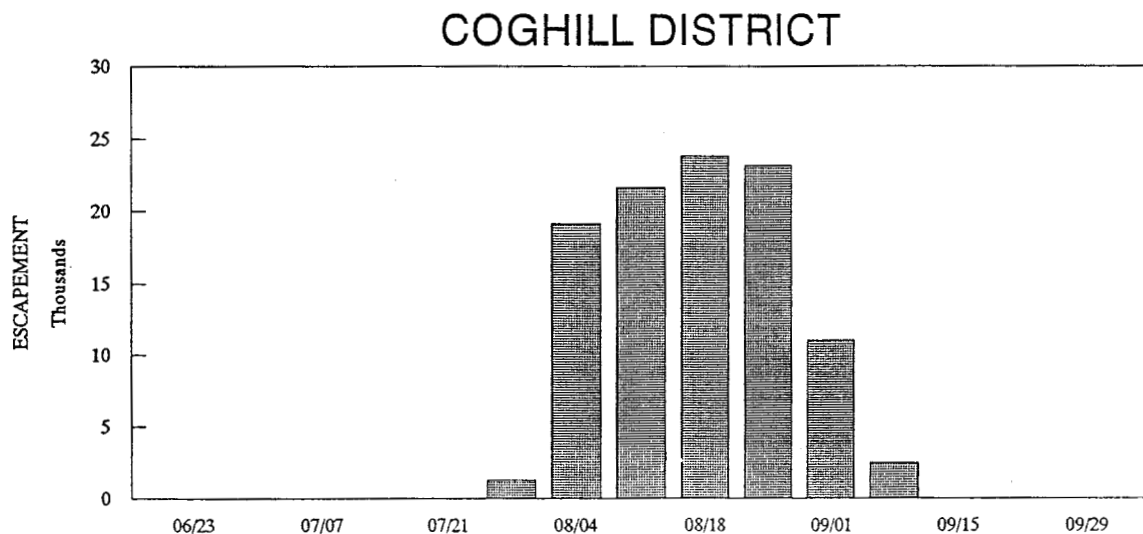
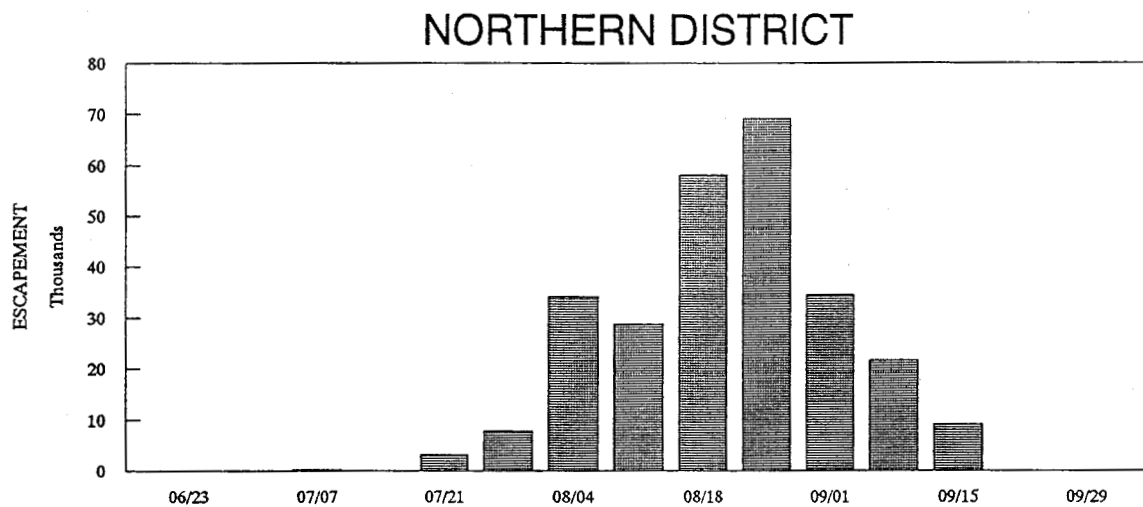
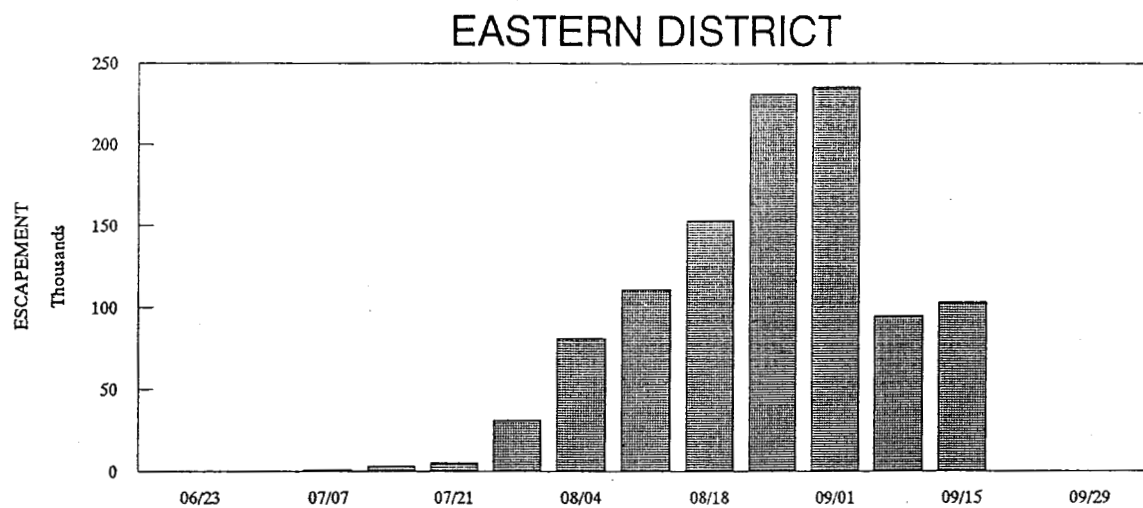


Figure 22. Weekly aerial escapement estimates of wild pink salmon by district, Prince William Sound, 1990.

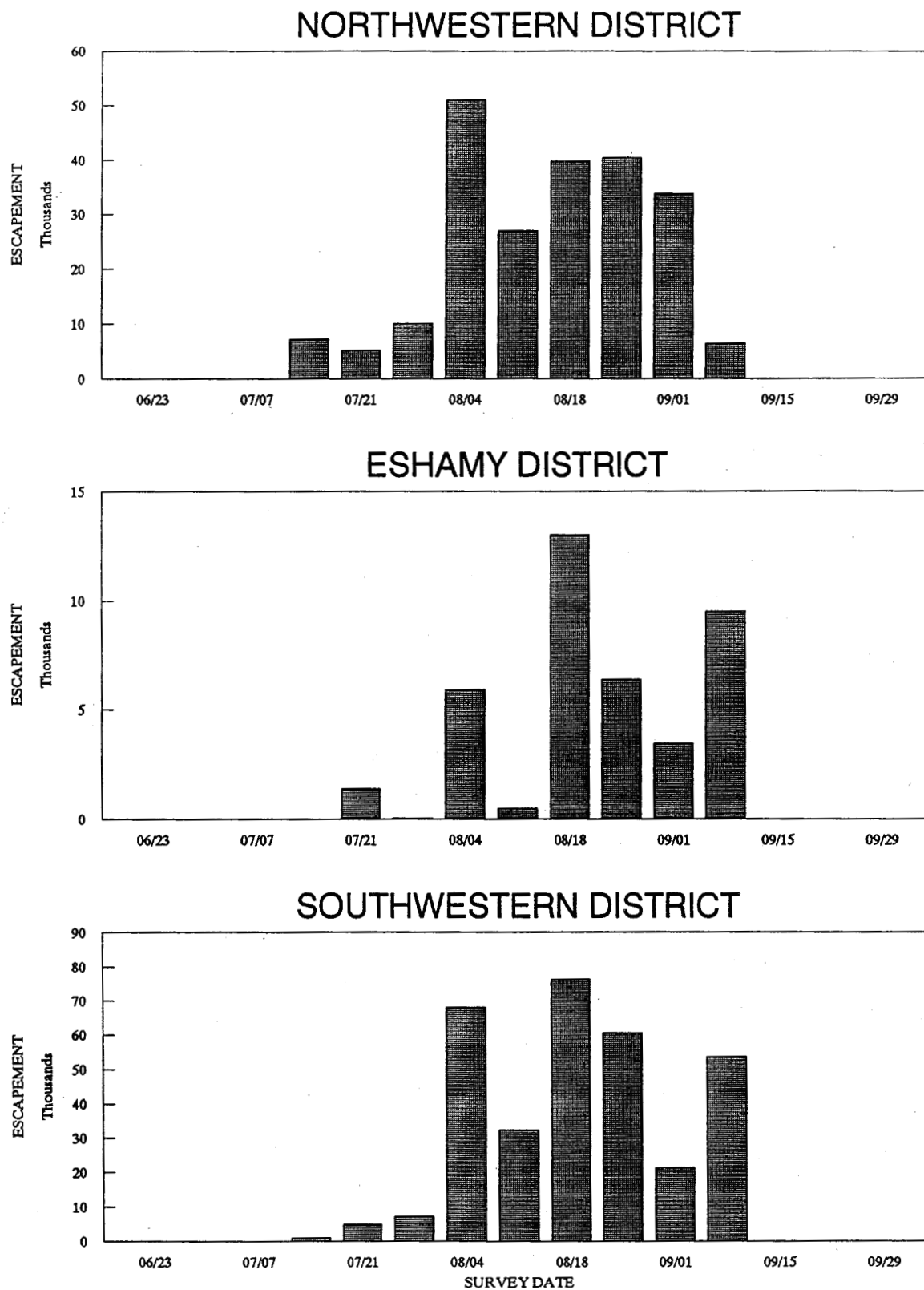


Figure 22. (page 2 of 3)

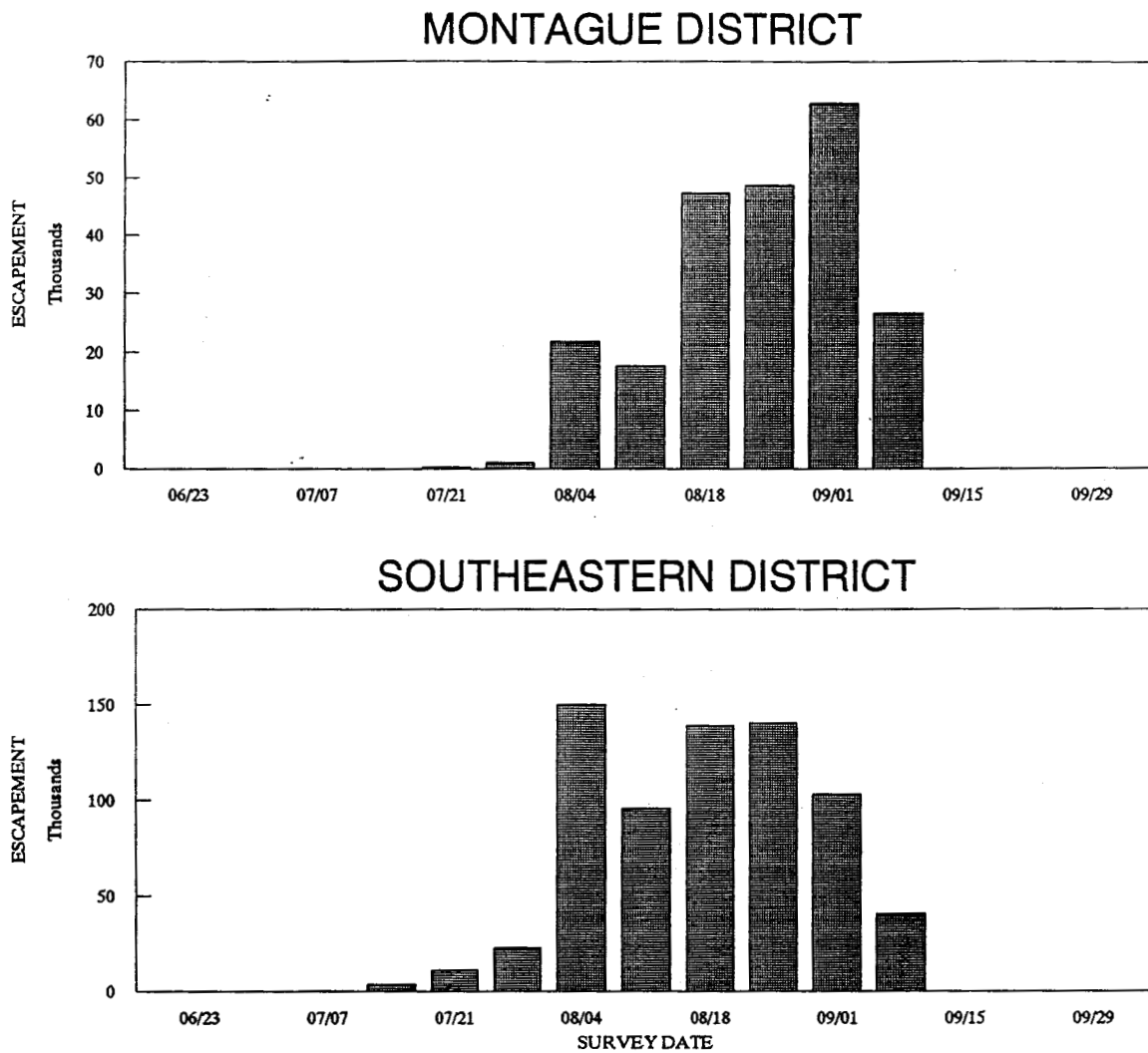


Figure 22. (page 3 of 3)

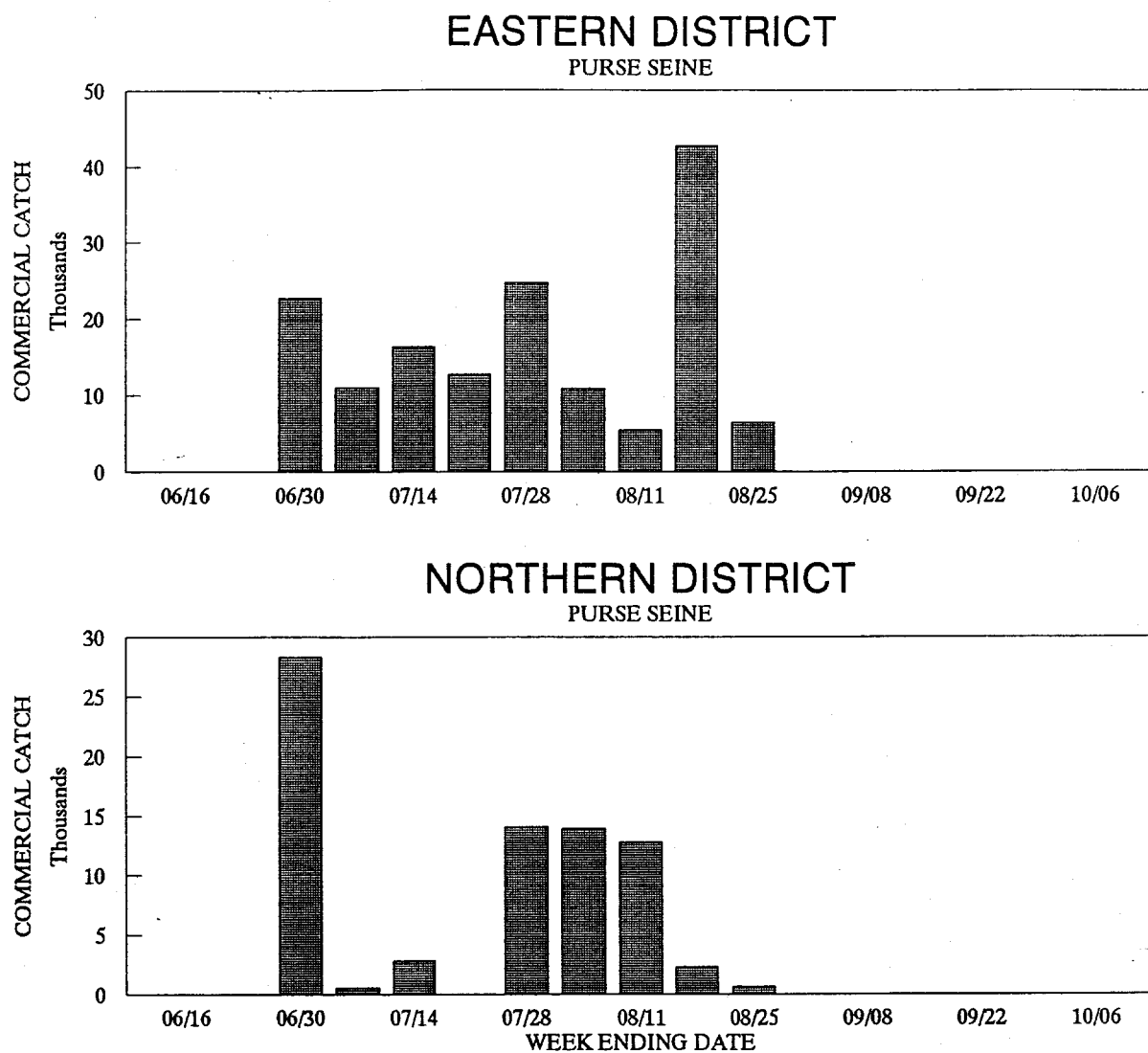


Figure 23. Weekly chum salmon catches from the major commercial common property purse seine, drift gillnet, and set gillnet fisheries in Prince William Sound, 1990.

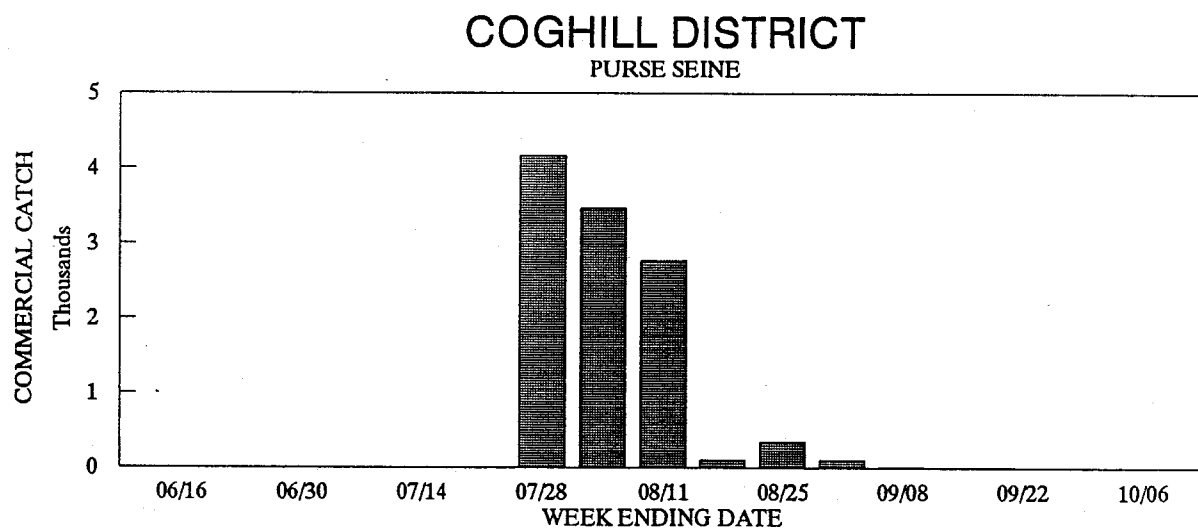
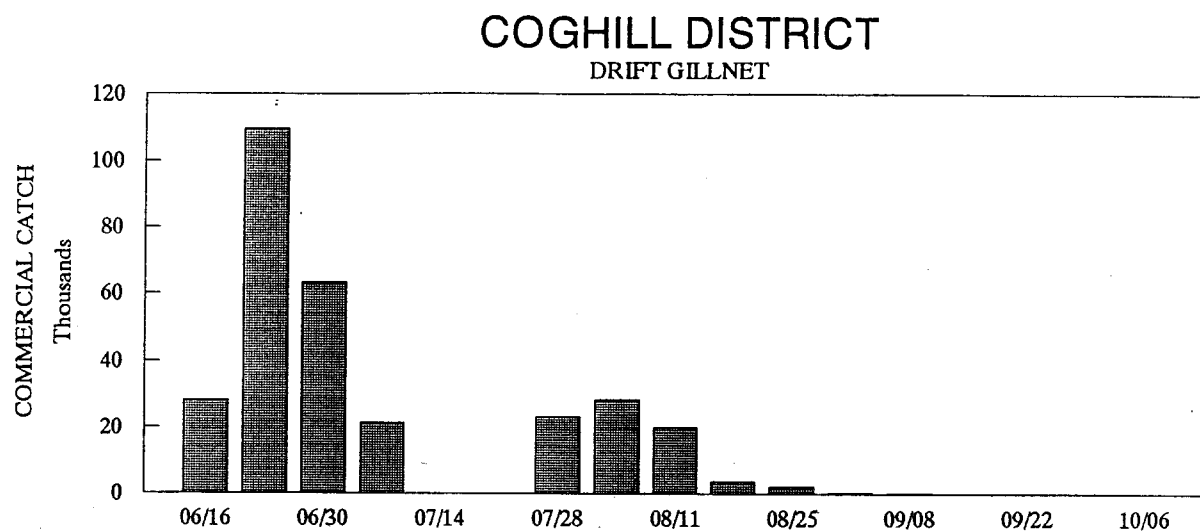
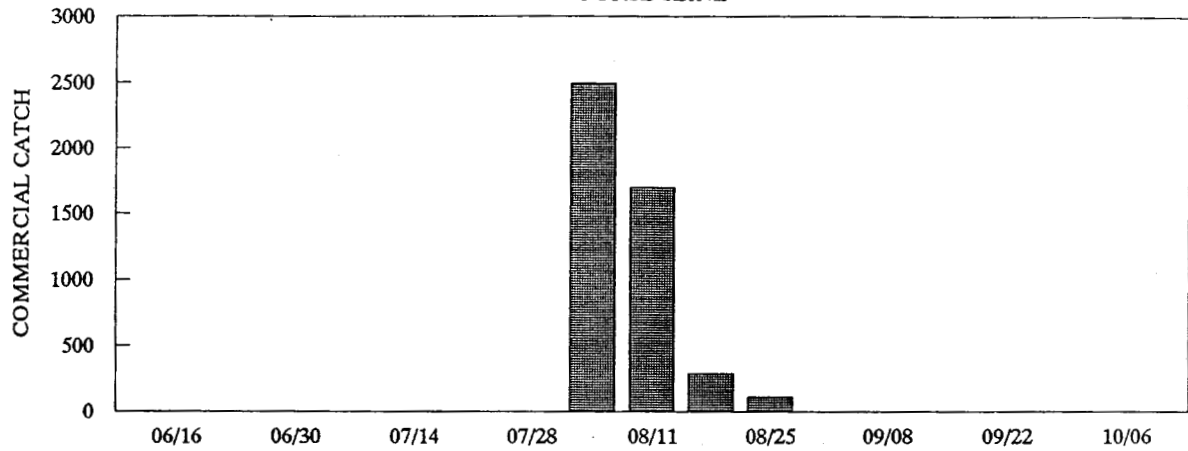


Figure 23. (pg. 2 of 3)

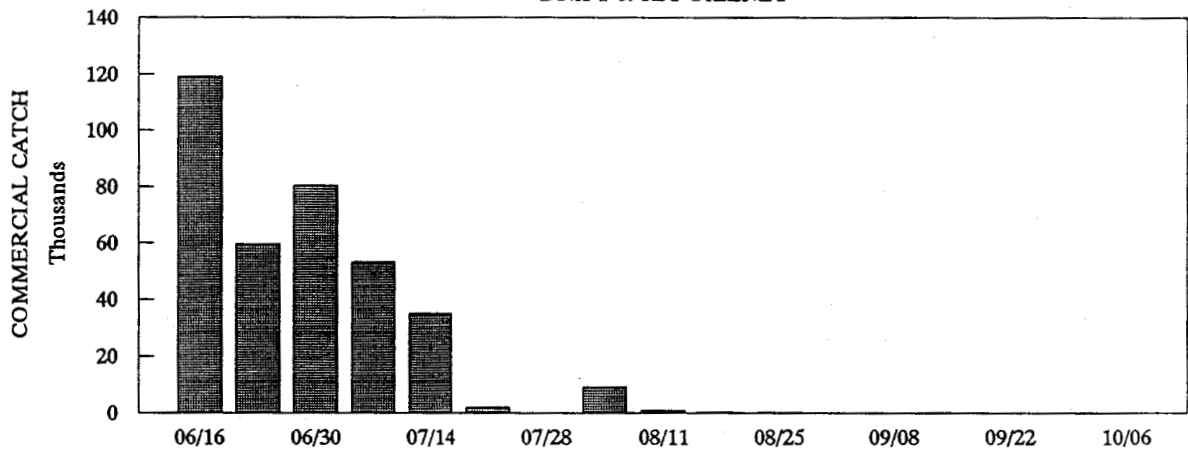
NORTHWESTERN DISTRICT

PURSE SEINE



ESHAMY DISTRICT

DRIFT & SET GILLNET



SOUTHWESTERN DISTRICT

PURSE SEINE

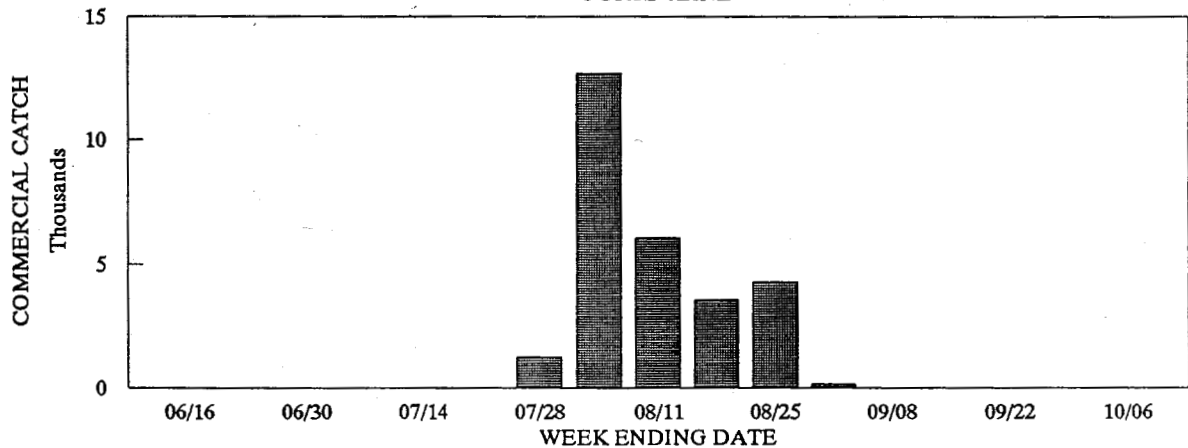


Figure 23. (pg. 3 of 3)

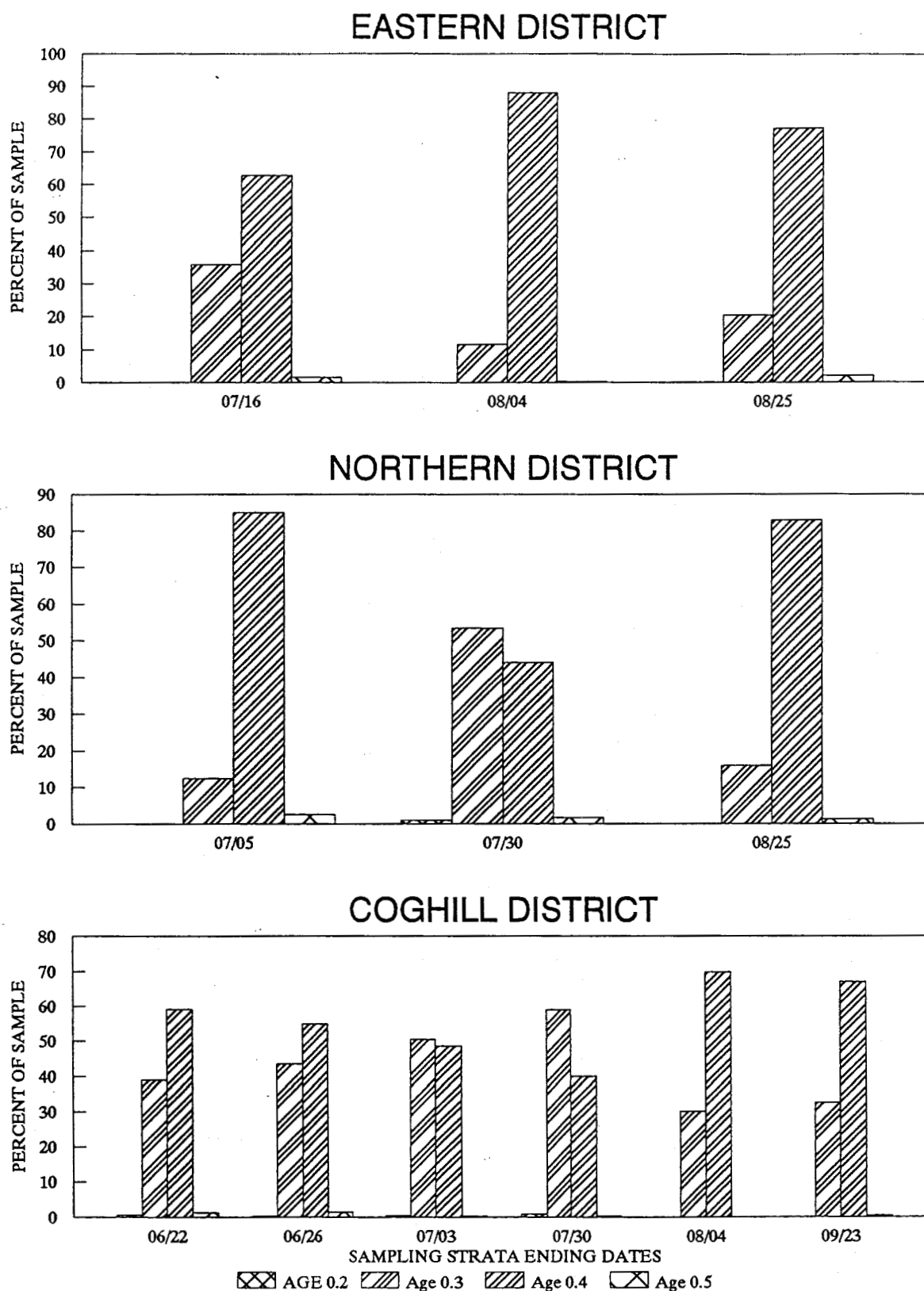


Figure 24. Temporally stratified age composition of chum salmon from five of the most important commercial common property purse seine and gillnet districts, Prince William Sound, 1990.

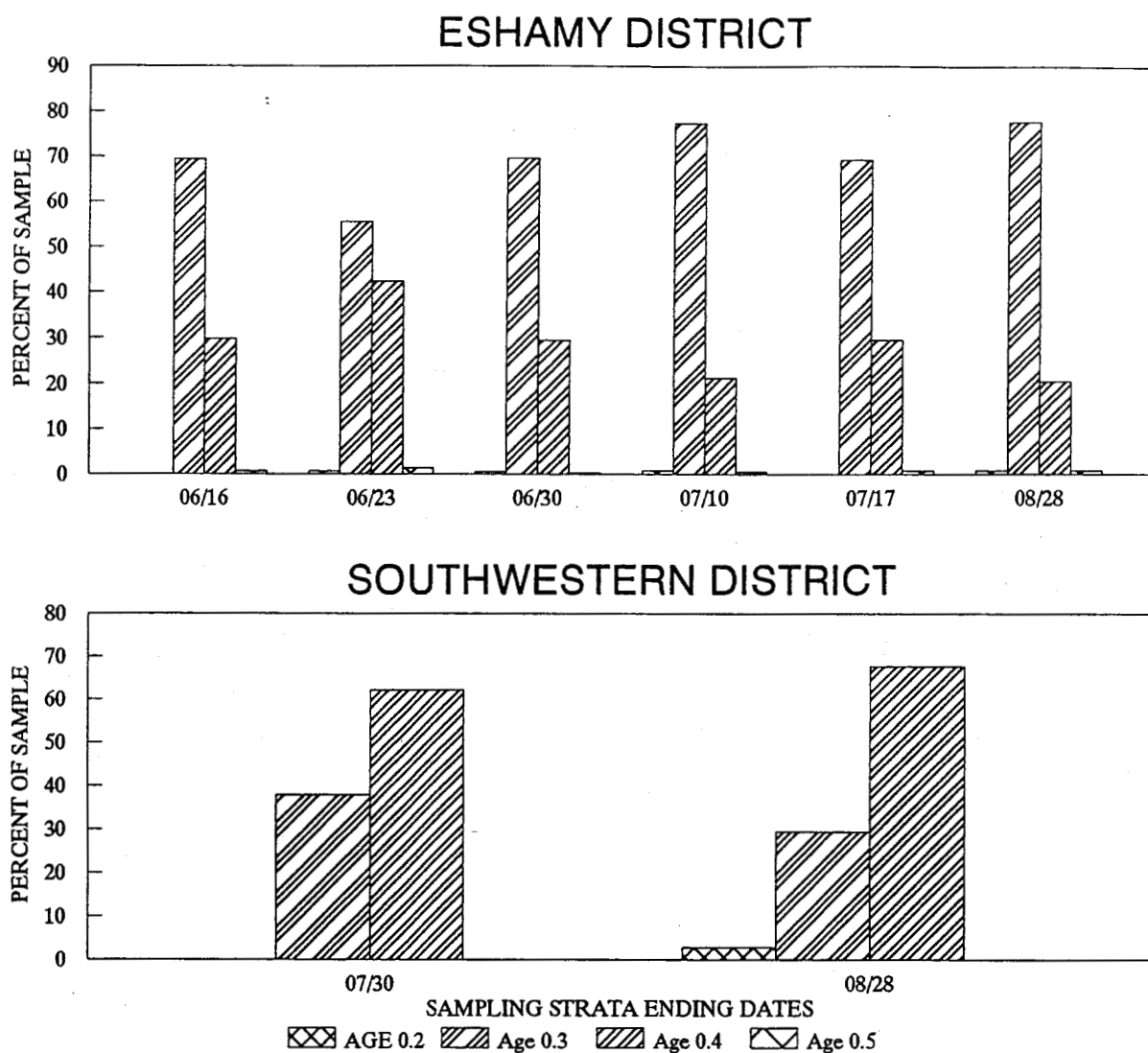


Figure 24. (pg. 2 of 2)

APPENDIX

Appendix A: AGE AND SEX DATA FOR COMMERCIAL COMMON PROPERTY SALMON CATCHES FROM THE COPPER AND BERING RIVERS (DISTRICTS 200 AND 212)

Appendix A.1. Temporally stratified age and sex composition of the sockeye salmon harvested in the Copper River District commercial common property drift gillnet fishery, 1990.

		Brood Year and Age Group										
		1987		1986		1985			1984		1983	
		0.2	1.1	0.3	1.2	0.4	1.3	2.2	1.4	2.3	2.4	Total
Stratum Dates:	05/14 - 05/15											
Sampling Dates:	05/15											
Sample Size:	501											
Female	Percent of Sample	0.0	0.0	11.8	0.4	0.0	19.4	0.4	0.4	16.2	0.4	48.9
	Number in Catch	0	0	2,314	78	0	3,804	78	78	3,176	78	9,607
Male	Percent of Sample	0.0	0.0	13.6	0.6	0.4	22.8	0.4	0.6	12.6	0.0	50.9
	Number in Catch	0	0	2,667	118	78	4,470	78	118	2,470	0	9,999
Total	Percent of Sample	0.0	0.0	25.3	1.0	0.4	42.3	0.8	1.0	28.7	0.4	100.0
	Number in Catch	0	0	4,980	196	78	8,313	157	196	5,647	78	19,646
	Standard Error	0	0	382	87	55	434	78	87	398	55	
Stratum Dates:	05/17 - 05/22											
Sampling Dates:	05/22											
Sample Size:	535											
Female	Percent of Sample	0.0	0.0	17.0	1.3	0.0	18.7	0.7	0.0	13.3	0.0	51.0
	Number in Catch	0	0	25,780	1,983	0	28,329	1,133	0	20,114	0	77,339
Male	Percent of Sample	0.0	0.0	17.6	0.9	0.0	22.2	0.0	0.0	8.2	0.0	49.0
	Number in Catch	0	0	26,630	1,416	0	33,712	0	0	12,465	0	74,223
Total	Percent of Sample	0.0	0.0	34.6	2.2	0.0	40.9	0.7	0.0	21.5	0.0	100.0
	Number in Catch	0	0	52,409	3,400	0	62,041	1,133	0	32,579	0	151,562
	Standard Error	0	0	3,120	971	0	3,225	565	0	2,694	0	
Stratum Dates:	05/25 - 05/29											
Sampling Dates:	05/30											
Sample Size:	507											
Female	Percent of Sample	0.0	0.0	6.7	2.8	0.2	22.3	1.0	0.0	15.6	0.0	48.5
	Number in Catch	0	0	10,347	4,261	304	34,389	1,522	0	24,042	0	74,864
Male	Percent of Sample	0.0	0.0	9.9	4.1	0.2	24.9	1.4	0.2	10.8	0.0	51.5
	Number in Catch	0	0	15,216	6,391	304	38,345	2,130	304	16,738	0	79,429
Total	Percent of Sample	0.0	0.0	16.6	6.9	0.4	47.1	2.4	0.2	26.4	0.0	100.0
	Number in Catch	0	0	25,563	10,651	609	72,734	3,652	304	40,780	0	154,293
	Standard Error	0	0	2,550	1,739	430	3,424	1,043	304	3,025	0	

- continued -

Appendix A.1. (page 2 of 3)

		Brood Year and Age Group										
		1987		1986		1985			1984		1983	
		0.2	1.1	0.3	1.2	0.4	1.3	2.2	1.4	2.3	2.4	Total
Stratum Dates: 05/31 - 06/05												
Sampling Dates: 06/05												
Sample Size: 501												
Female	Percent of Sample	0.2	0.0	8.0	1.8	0.2	24.0	1.8	0.8	11.4	0.2	48.3
	Number in Catch	207	0	8,290	1,865	207	24,871	1,865	829	11,814	207	50,157
Male	Percent of Sample	0.2	0.0	8.0	3.2	0.2	28.1	2.4	0.8	8.8	0.0	51.7
	Number in Catch	207	0	8,290	3,316	207	29,224	2,487	829	9,120	0	53,681
Total	Percent of Sample	0.4	0.0	16.0	5.0	0.4	52.1	4.2	1.6	20.2	0.2	100.0
	Number in Catch	415	0	16,581	5,182	415	54,095	4,352	1,658	20,933	207	103,838
	Standard Error	293	0	1,701	1,011	293	2,320	931	582	1,863	207	
Stratum Dates: 06/11 - 06/15												
Sampling Dates: 06/12												
Sample Size: 520												
Female	Percent of Sample	0.0	0.0	5.8	4.0	0.0	33.8	0.6	0.0	6.2	0.0	50.4
	Number in Catch	0	0	6,282	4,397	0	36,853	628	0	6,701	0	54,861
Male	Percent of Sample	0.2	0.0	4.6	7.9	0.0	30.8	1.9	0.2	3.7	0.4	49.6
	Number in Catch	209	0	5,025	8,585	0	33,503	2,094	209	3,978	419	54,024
Total	Percent of Sample	0.2	0.0	10.4	11.9	0.0	64.6	2.5	0.2	9.8	0.4	100.0
	Number in Catch	209	0	11,307	12,982	0	70,356	2,722	209	10,679	419	108,885
	Standard Error	209	0	1,458	1,549	0	2,285	746	209	1,422	296	
Stratum Dates: 06/18 - 06/30												
Sampling Dates: 06/23												
Sample Size: 512												
Female	Percent of Sample	0.2	0.0	5.1	6.4	0.0	38.3	0.4	0.8	1.2	0.0	52.3
	Number in Catch	249	0	6,482	8,227	0	48,861	499	997	1,496	0	66,810
Male	Percent of Sample	0.6	0.2	4.9	12.3	0.0	27.5	0.6	0.4	1.2	0.0	47.7
	Number in Catch	748	249	6,232	15,705	0	35,150	748	499	1,496	0	60,827
Total	Percent of Sample	0.8	0.2	10.0	18.8	0.0	65.8	1.0	1.2	2.3	0.0	100.0
	Number in Catch	997	249	12,714	23,932	0	84,011	1,246	1,496	2,991	0	127,637
	Standard Error	497	249	1,691	2,204	0	2,678	555	608	854	0	

- continued -

Appendix A.1. (page 3 of 3)

		Brood Year and Age Group										
		1987		1986		1985			1984		1983	
		0.2	1.1	0.3	1.2	0.4	1.3	2.2	1.4	2.3	2.4	Total
Stratum Dates: 07/02 - 07/17												
Sampling Dates: 07/14												
Sample Size: 502												
Female	Percent of Sample	0.8	0.2	3.6	14.5	0.0	23.9	1.2	0.0	1.4	0.0	45.6
	Number in Catch	981	245	4,414	17,900	0	29,425	1,471	0	1,716	0	56,153
Male	Percent of Sample	1.0	0.4	3.6	14.3	0.0	30.7	1.6	0.6	2.2	0.0	54.4
	Number in Catch	1,226	490	4,414	17,655	0	37,763	1,962	736	2,697	0	66,943
Total	Percent of Sample	1.8	0.6	7.2	28.9	0.0	54.6	2.8	0.6	3.6	0.0	100.0
	Number in Catch	2,207	736	8,828	35,556	0	67,188	3,433	736	4,414	0	123,096
	Standard Error	730	424	1,419	2,493	0	2,738	906	424	1,023	0	
Stratum Dates: 07/19 - 09/28												
Sampling Dates: 07/28												
Sample Size: 478												
Female	Percent of Sample	0.0	0.0	5.0	12.8	0.0	27.6	2.7	0.2	1.5	0.0	49.8
	Number in Catch	0	0	2,803	7,124	0	15,415	1,518	117	817	0	27,794
Male	Percent of Sample	1.5	0.0	2.7	11.5	0.0	31.2	1.3	0.0	1.7	0.0	49.8
	Number in Catch	817	0	1,518	6,423	0	17,400	701	0	934	0	27,794
Total	Percent of Sample	1.5	0.0	7.7	24.3	0.0	59.2	4.0	0.2	3.1	0.0	100.0
	Number in Catch	817	0	4,321	13,547	0	33,049	2,219	117	1,752	0	55,821
	Standard Error	307	0	683	1,096	0	1,256	499	117	446	0	
Strata Combined: 05/14 - 09/28												
Sampling Dates: 05/15 - 07/28												
Sample Size: 4,056												
Female	Percent of Sample	0.2	0.0	7.9	5.4	0.1	26.3	1.0	0.2	8.3	0.0	49.4
	Number in Catch	1,437	245	66,711	45,835	512	221,948	8,715	2,021	69,876	286	417,586
Male	Percent of Sample	0.4	0.1	8.3	7.1	0.1	27.2	1.2	0.3	5.9	0.0	50.5
	Number in Catch	3,208	740	69,993	59,610	590	229,567	10,200	2,695	49,899	419	426,919
Total	Percent of Sample	0.5	0.1	16.2	12.5	0.1	53.5	2.2	0.6	14.2	0.1	100.0
	Number in Catch	4,645	985	136,703	105,445	1,102	451,788	18,915	4,716	119,775	704	844,778
	Standard Error	1,002	492	5,171	4,435	523	7,012	2,053	1,022	4,902	365	

Appendix A.2. Estimated age and sex composition of sockeye salmon harvested in the Bering River District commercial common property drift gillnet fishery, 1990.

		Brood Year and Age Group							
		1987	1986		1985		1984		
		0.2	0.3	1.2	1.3	2.2	1.4	2.3	Total
<hr/>									
Stratum Dates: 06/18 – 09/14									
Sampling Dates: 06/19									
Sample Size: 535									
Female	Percent of Sample	0.2	6.0	18.1	22.1	0.4	0.6	1.3	48.6
	Number in Catch	16	498	1,511	1,838	31	47	109	4,049
Male	Percent of Sample	0.6	3.6	26.4	19.4	0.4	0.2	0.9	51.4
	Number in Catch	47	296	2,196	1,620	31	16	78	4,283
Total	Percent of Sample	0.7	9.5	44.5	41.5	0.7	0.7	2.2	100.0
	Number in Catch	62	794	3,707	3,457	62	62	187	8,332
	Standard Error	31	106	179	178	31	31	53	

Appendix A.3. Temporally stratified age and sex composition of the chinook salmon harvested in the Copper River District commercial common property drift gillnet fishery, 1990.

		Brood Year and Age Group														
		1987		1986		1985		1984		1983		1982				
		0.2	1.1	0.3	1.2	2.1	1.3	2.2	1.4	2.3	3.2	1.5	2.4	3.3	2.5	Total
Stratum Dates:	05/14 - 05/18															
Sampling Dates:	05/15															
Sample Size:	418															
Female	Percent of Sample Number in Catch	0.0 0	0.0 0	0.0 0	0.0 0	0.0 0	7.9 517	0.0 0	41.1 2,694	1.2 78	0.0 0	0.0 0	6.7 439	0.0 0	0.0 0	56.9 3,728
Male	Percent of Sample Number in Catch	0.0 0	0.0 0	0.0 0	1.7 110	0.0 0	3.3 219	0.0 0	30.1 1,974	0.7 47	0.0 0	1.2 78	5.5 360	0.0 0	0.5 31	43.1 2,820
Total	Percent of Sample Number in Catch Standard Error	0.0 0 0	0.0 0 0	0.0 0 0	1.7 110 41	0.0 0 0	11.2 736 101	0.0 0 0	71.3 4,668 145	1.9 125 44	0.0 0 0	1.2 78 35	12.2 799 105	0.0 0 0	0.5 31 22	100.0 6,548
Stratum Dates:	05/21 - 05/25															
Sampling Dates:	05/26															
Sample Size:	411															
Female	Percent of Sample Number in Catch	0.0 0	0.0 0	0.0 0	0.5 24	0.0 0	18.5 909	0.0 0	32.1 1,578	0.5 24	0.0 0	0.7 36	4.9 239	0.0 0	0.0 0	57.2 2,810
Male	Percent of Sample Number in Catch	0.0 0	0.0 0	0.0 0	4.9 239	0.0 0	10.2 502	0.2 12	22.1 1,088	1.2 60	0.0 0	0.5 24	3.4 167	0.0 0	0.0 0	42.6 2,092
Total	Percent of Sample Number in Catch Standard Error	0.0 0 0	0.0 0 0	0.0 0 0	5.4 263 55	0.0 0 0	28.7 1,411 110	0.2 12 12	54.3 2,666 121	1.7 84 31	0.0 0 0	1.2 60 27	8.5 418 68	0.0 0 0	0.0 0 0	100.0 4,914
Stratum Dates:	05/28 - 06/05															
Sampling Dates:	06/01 - 06/02															
Sample Size:	404															
Female	Percent of Sample Number in Catch	0.0 0	0.2 18	0.0 0	1.2 91	0.0 0	16.3 1,196	0.5 36	19.6 1,431	1.7 127	0.0 0	0.5 36	3.7 272	0.2 18	0.2 18	44.3 3,242
Male	Percent of Sample Number in Catch	0.7 54	0.5 36	0.0 0	7.7 562	0.2 18	16.3 1,196	2.7 199	20.5 1,503	0.7 54	0.2 18	1.7 127	3.2 235	0.0 0	0.2 18	55.0 4,021
Total	Percent of Sample Number in Catch Standard Error	0.7 54 31	0.7 54 31	0.0 0 0	8.9 652 104	0.2 18 18	32.7 2,391 171	3.2 235 64	40.8 2,989 179	2.5 181 57	0.2 18 18	2.2 163 54	6.9 507 93	0.2 18 18	0.5 36 26	100.0 7,318

-Continued-

Appendix A.3. (page 2 of 2).

		Brood Year and Age Group															
		1987		1986			1985		1984			1983			1982		
		0.2	1.1	0.3	1.2	2.1	1.3	2.2	1.4	2.3	3.2	1.5	2.4	3.3	2.5	Total	
Stratum Dates: 06/11 - 06/15 Sampling Dates: 06/15 - 06/16 Sample Size: 185																	
Female	Percent of Sample	0.0	0.0	0.0	3.8	0.0	15.7	0.0	18.4	1.1	1.1	0.5	4.3	0.0	0.0	44.9	
	Number in Catch	0	0	0	80	0	330	0	386	23	23	11	91	0	0	944	
Male	Percent of Sample	0.0	0.5	0.0	5.9	1.1	14.6	1.1	27.0	1.1	0.0	2.2	1.1	0.0	0.0	54.6	
	Number in Catch	0	11	0	125	23	307	23	568	23	0	45	23	0	0	1,148	
Total	Percent of Sample	0.0	0.5	0.0	9.7	1.1	30.3	1.1	45.9	2.2	1.1	2.7	5.4	0.0	0.0	100.0	
	Number in Catch	0	11	0	205	23	637	23	966	45	23	57	114	0	0	2,103	
	Standard Error	0	11	0	46	16	71	16	77	23	16	25	35	0	0		
Stratum Dates: 06/18 - 08/29 Sampling Dates: 06/18 - 06/19 Sample Size: 176																	
Female	Percent of Sample	0.0	0.0	0.0	0.0	0.0	17.6	0.0	25.6	2.3	0.0	1.1	2.8	0.0	0.0	49.4	
	Number in Catch	0	0	0	0	0	144	0	209	19	0	9	23	0	0	405	
Male	Percent of Sample	0.0	0.0	0.6	4.0	0.6	14.2	1.1	26.1	0.6	0.0	1.7	1.7	0.0	0.0	50.6	
	Number in Catch	0	0	5	33	5	116	9	214	5	0	14	14	0	0	414	
Total	Percent of Sample	0.0	0.0	0.6	4.0	0.6	31.8	1.1	51.7	2.8	0.0	2.8	4.5	0.0	0.0	100.0	
	Number in Catch	0	0	5	33	5	261	9	423	23	0	23	37	0	0	819	
	Standard Error	0	0	5	12	5	29	7	31	10	0	10	13	0	0		
Strata Combined: 05/14 - 08/29 Sampling Dates: 05/15 - 06/19 Sample Size: 1,594																	
Female	Percent of Sample	0.0	0.1	0.0	0.9	0.0	14.3	0.2	29.0	1.2	0.1	0.4	4.9	0.1	0.1	51.3	
	Number in Catch	0	18	0	194	0	3,095	36	6,300	270	23	93	1,064	18	18	11,129	
Male	Percent of Sample	0.3	0.2	0.0	4.9	0.2	10.8	1.1	24.6	0.9	0.1	1.3	3.7	0.0	0.2	48.4	
	Number in Catch	54	48	5	1,068	46	2,340	243	5,348	189	18	288	800	0	49	10,496	
Total	Percent of Sample	0.3	0.3	0.0	5.8	0.2	25.0	1.3	54.0	2.1	0.2	1.8	8.6	0.1	0.3	100.0	
	Number in Catch	54	66	5	1,262	46	5,435	279	11,713	459	41	381	1,875	18	68	21,702	
	Standard Error	31	33	5	133	25	240	68	273	82	24	75	160	18	34		

Appendix A.4. Temporally stratified age and sex composition of coho salmon harvested in the Copper River District commercial common property drift gillnet fishery, 1990.

		Brood Year and Age Group				
		1988	1987	1986	1985	Total
		0.1	1.1	2.1	3.1	
Stratum Dates: 05/14 - 08/15						
Sampling Dates: 08/15 - 08/15						
Sample Size: 497						
Female	Percent of Sample	0.2	20.1	20.5	0.2	41.0
	Number in Catch	90	9,027	9,208	90	18,416
Male	Percent of Sample	0.0	28.8	28.4	0.2	57.3
	Number in Catch	0	12,909	12,729	90	25,728
Total	Percent of Sample	0.2	49.7	49.7	0.4	100.0
	Number in Catch	90	22,298	22,298	181	44,866
	Standard Error	90	1,007	1,007	128	
Stratum Dates: 08/20 - 08/29						
Sampling Dates: 08/29 - 08/29						
Sample Size: 580						
Female	Percent of Sample	0.0	11.2	25.5	2.4	39.1
	Number in Catch	0	10,192	23,207	2,195	35,595
Male	Percent of Sample	0.2	20.0	37.8	2.8	60.7
	Number in Catch	157	18,190	34,341	2,509	55,196
Total	Percent of Sample	0.2	31.2	63.4	5.2	100.0
	Number in Catch	157	28,382	57,705	4,704	90,948
	Standard Error	157	1,751	1,820	837	
Stratum Dates: 09/06 - 10/12						
Sampling Dates: 09/08 - 09/08						
Sample Size: 523						
Female	Percent of Sample	0.0	11.9	23.3	2.1	37.3
	Number in Catch	0	13,157	25,889	2,334	41,380
Male	Percent of Sample	0.6	22.2	36.7	2.3	61.8
	Number in Catch	637	24,616	40,743	2,546	68,542
Total	Percent of Sample	0.6	34.8	60.2	4.4	100.0
	Number in Catch	637	38,621	66,844	4,881	110,983
	Standard Error	367	2,314	2,377	996	
Strata Combined: 05/14 - 10/12						
Sampling Dates: 08/15 - 09/08						
Sample Size: 1,600						
Female	Percent of Sample	0.0	13.1	23.6	1.9	38.7
	Number in Catch	90	32,376	58,304	4,620	95,391
Male	Percent of Sample	0.3	22.6	35.6	2.1	60.6
	Number in Catch	793	55,714	87,813	5,146	149,466
Total	Percent of Sample	0.4	36.2	59.5	4.0	100.0
	Number in Catch	884	89,301	146,847	9,765	246,797
	Standard Error	409	3,072	3,159	1,307	

Appendix A.5. Temporally stratified age and sex composition of the coho salmon harvested in the Bering River District commercial common property drift gillnet fishery, 1990.

		Brood Year and Age Group				
		1988	1987	1986	1985	Total
		0.1	1.1	2.1	3.1	
Stratum Dates: 06/18 - 08/29						
Sampling Dates: 08/30						
Sample Size: 526						
Female	Percent of Sample	0.0	8.0	22.4	4.6	35.0
	Number in Catch	0	1,596	4,484	912	6,992
Male	Percent of Sample	0.0	21.9	37.8	5.3	65.0
	Number in Catch	0	4,370	7,562	1,064	12,996
Total	Percent of Sample	0.0	29.8	60.3	9.9	100.0
	Number in Catch	0	5,966	12,046	1,976	19,988
	Standard Error	0	399	427	260	
Stratum Dates: 09/06 - 09/21						
Sampling Dates: 09/22						
Sample Size: 467						
Female	Percent of Sample	0.2	16.9	37.7	1.5	56.3
	Number in Catch	49	3,885	8,655	344	12,933
Male	Percent of Sample	0.0	10.1	31.9	1.7	43.7
	Number in Catch	0	2,311	7,327	393	10,031
Total	Percent of Sample	0.2	27.0	69.6	3.2	100.0
	Number in Catch	49	6,196	15,981	738	22,964
	Standard Error	49	472	489	188	
Strata Combined: 06/18 - 09/21						
Sampling Dates: 08/30 - 09/22						
Sample Size: 993						
Female	Percent of Sample	0.1	12.8	30.6	2.9	46.4
	Number in Catch	49	5,481	13,139	1,256	19,925
Male	Percent of Sample	0.0	15.6	34.7	3.4	53.6
	Number in Catch	0	6,681	14,889	1,457	23,027
Total	Percent of Sample	0.1	28.3	65.3	6.3	100.0
	Number in Catch	49	12,162	28,027	2,714	42,952
	Standard Error	49	618	649	321	

APPENDIX B: SUBSISTENCE, PERSONAL USE, AND SPORT FISH SALMON CATCHES FROM THE UPPER COPPER RIVER

Appendix B.1. Daily catches of sockeye, chinook, and coho salmon in the subsistence and personal use fisheries on the upper Copper River, 1990.

Date	Personal Use Catch						Subsistence Catch						Combined Catches					
	Sockeye		Chinook		Coho		Sockeye		Chinook		Coho		Sockeye		Chinook		Coho	
	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.
6/01	1,209	1,209	79	79	0	0	696	696	14	14	0	0	1,905	1,905	93	93	0	0
6/02	1,344	2,553	113	192	0	0	211	907	3	17	0	0	1,555	3,460	116	209	0	0
6/03	883	3,436	55	247	0	0	116	1,023	0	17	0	0	999	4,459	55	264	0	0
6/04	6	3,442	0	247	0	0	264	1,287	18	35	0	0	270	4,729	18	282	0	0
6/05	0	3,442	0	247	0	0	294	1,581	16	51	0	0	294	5,023	16	298	0	0
6/06	95	3,537	4	251	0	0	413	1,994	22	73	0	0	508	5,531	26	324	0	0
6/07	573	4,110	28	279	0	0	246	2,240	7	80	0	0	819	6,350	35	359	0	0
6/08	1,517	5,627	102	381	0	0	316	2,556	8	88	0	0	1,833	8,183	110	469	0	0
6/09	2,177	7,804	218	599	0	0	771	3,327	8	96	0	0	2,948	11,131	226	695	0	0
6/10	1,039	8,843	103	702	0	0	1,600	4,927	50	146	0	0	2,639	13,770	153	848	0	0
6/11	102	8,945	6	708	0	0	546	5,473	9	155	0	0	648	14,418	15	863	0	0
6/12	617	9,562	25	733	0	0	949	6,422	17	172	0	0	1,566	15,984	42	905	0	0
6/13	1,086	10,648	37	770	0	0	715	7,137	29	201	0	0	1,801	17,785	66	971	0	0
6/14	1,269	11,917	55	825	0	0	587	7,724	7	208	0	0	1,856	19,641	62	1,033	0	0
6/15	1,651	13,568	98	923	0	0	1,245	8,969	19	227	0	0	2,896	22,537	117	1,150	0	0
6/16	3,399	16,967	313	1,236	0	0	573	9,542	13	240	0	0	3,972	26,509	326	1,476	0	0
6/17	1,504	18,471	118	1,354	0	0	721	10,263	15	255	0	0	2,225	28,734	133	1,609	0	0
6/18	255	18,726	20	1,374	0	0	598	10,861	5	260	0	0	853	29,587	25	1,634	0	0
6/19	571	19,297	33	1,407	0	0	477	11,338	21	281	0	0	1,048	30,635	54	1,688	0	0
6/20	818	20,115	33	1,440	0	0	1,443	12,781	18	299	0	0	2,261	32,896	51	1,739	0	0
6/21	1,656	21,771	65	1,505	0	0	469	13,250	12	311	0	0	2,125	35,021	77	1,816	0	0
6/22	1,171	22,942	58	1,563	0	0	683	13,933	5	316	0	0	1,854	36,875	63	1,879	0	0
6/23	3,024	25,966	195	1,758	0	0	529	14,462	6	322	0	0	3,553	40,428	201	2,080	0	0
6/24	1,222	27,188	42	1,800	0	0	435	14,897	7	329	0	0	1,657	42,085	49	2,129	0	0
6/25	580	27,768	18	1,818	0	0	654	15,551	5	334	0	0	1,234	43,319	23	2,152	0	0
6/26	672	28,440	17	1,835	0	0	286	15,837	6	340	0	0	958	44,277	23	2,175	0	0
6/27	855	29,295	37	1,872	0	0	462	16,299	4	344	0	0	1,317	45,594	41	2,216	0	0
6/28	784	30,079	36	1,908	0	0	512	16,811	19	363	0	0	1,296	46,890	55	2,271	0	0
6/29	1,000	31,079	36	1,944	0	0	413	17,224	4	367	0	0	1,413	48,303	40	2,311	0	0
6/30	1,619	32,698	110	2,054	0	0	1,416	18,640	48	415	0	0	3,035	51,338	158	2,469	0	0
7/01	368	33,066	32	2,086	0	0	420	19,060	10	425	0	0	788	52,126	42	2,511	0	0
7/02	301	33,367	15	2,101	0	0	448	19,508	7	432	0	0	749	52,875	22	2,533	0	0
7/03	329	33,696	21	2,122	0	0	210	19,718	5	437	0	0	539	53,414	26	2,559	0	0
7/04	635	34,331	24	2,146	0	0	274	19,992	21	458	0	0	909	54,323	45	2,604	0	0
7/05	258	34,589	7	2,153	0	0	302	20,294	6	464	0	0	560	54,883	13	2,617	0	0
7/06	933	35,522	43	2,196	0	0	311	20,605	5	469	0	0	1,244	56,127	48	2,665	0	0
7/07	1,162	36,684	58	2,254	0	0	332	20,937	11	480	0	0	1,494	57,621	69	2,734	0	0
7/08	304	36,988	14	2,268	0	0	49	20,986	4	484	0	0	353	57,974	18	2,752	0	0
7/09	266	37,254	9	2,277	0	0	146	21,132	10	494	0	0	412	58,386	19	2,771	0	0
7/10	629	37,883	14	2,291	0	0	570	21,702	11	505	0	0	1,199	59,585	25	2,796	0	0
7/11	930	38,813	16	2,307	0	0	169	21,871	4	509	0	0	1,099	60,684	20	2,816	0	0
7/12	1,028	39,841	26	2,333	0	0	293	22,164	6	515	0	0	1,321	62,005	32	2,848	0	0
7/13	1,376	41,217	52	2,385	0	0	235	22,399	1	516	0	0	1,611	63,616	53	2,901	0	0
7/14	1,226	42,443	39	2,424	0	0	242	22,641	2	518	0	0	1,468	65,084	41	2,942	0	0
7/15	674	43,117	9	2,433	0	0	772	23,413	10	528	0	0	1,446	66,530	19	2,961	0	0
7/16	698	43,815	12	2,445	0	0	215	23,628	1	529	0	0	913	67,443	13	2,974	0	0
7/17	414	44,229	11	2,456	0	0	286	23,914	0	529	0	0	700	68,143	11	2,985	0	0
7/18	551	44,780	5	2,461	0	0	533	24,447	6	535	0	0	1,084	69,227	11	2,996	0	0

-Continued-

Date	Personal Use Catch						Subsistence Catch						Combined Catches					
	Sockeye		Chinook		Coho		Sockeye		Chinook		Coho		Sockeye		Chinook		Coho	
	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.
7/19	809	45,589	7	2,468	0	0	299	24,746	0	535	0	0	1,108	70,335	7	3,003	0	0
7/20	409	45,998	9	2,477	0	0	368	25,114	5	540	0	0	777	71,112	14	3,017	0	0
7/21	358	46,356	7	2,484	0	0	476	25,590	13	553	0	0	834	71,946	20	3,037	0	0
7/22	443	46,799	7	2,491	0	0	139	25,729	1	554	0	0	582	72,528	8	3,045	0	0
7/23	199	46,998	4	2,495	0	0	61	25,790	1	555	0	0	260	72,788	5	3,050	0	0
7/24	114	47,112	5	2,500	0	0	54	25,844	4	559	0	0	168	72,956	9	3,059	0	0
7/25	189	47,301	5	2,505	0	0	61	25,905	0	559	0	0	250	73,206	5	3,064	0	0
7/26	192	47,493	2	2,507	0	0	69	25,974	1	560	0	0	261	73,467	3	3,067	0	0
7/27	573	48,066	3	2,510	0	0	48	26,022	1	561	0	0	621	74,088	4	3,071	0	0
7/28	994	49,060	10	2,520	0	0	197	26,219	6	567	0	0	1,191	75,279	16	3,087	0	0
7/29	964	50,024	13	2,533	0	0	57	26,276	1	568	0	0	1,021	76,300	14	3,101	0	0
7/30	349	50,373	8	2,541	0	0	498	26,774	18	586	0	0	847	77,147	26	3,127	0	0
7/31	520	50,893	3	2,544	0	0	177	26,951	0	586	0	0	697	77,844	3	3,130	0	0
8/01	900	51,793	3	2,547	0	0	14	26,965	0	586	0	0	914	78,758	3	3,133	0	0
8/02	246	52,039	0	2,547	0	0	95	27,060	0	586	0	0	341	79,099	0	3,133	0	0
8/03	919	52,958	6	2,553	0	0	45	27,105	0	586	0	0	964	80,063	6	3,139	0	0
8/04	1,522	54,480	11	2,564	0	0	134	27,239	0	586	0	0	1,656	81,719	11	3,150	0	0
8/05	967	55,447	2	2,566	0	0	214	27,453	7	593	0	0	1,181	82,900	9	3,159	0	0
8/06	226	55,673	4	2,570	0	0	85	27,538	5	598	0	0	311	83,211	9	3,168	0	0
8/07	576	56,249	7	2,577	0	0	63	27,601	0	598	0	0	639	83,850	7	3,175	0	0
8/08	698	56,947	1	2,578	0	0	116	27,717	0	598	0	0	814	84,664	1	3,176	0	0
8/09	496	57,443	1	2,579	0	0	20	27,737	0	598	0	0	516	85,180	1	3,177	0	0
8/10	1,096	58,539	0	2,579	0	0	135	27,872	5	603	0	0	1,231	86,411	5	3,182	0	0
8/11	556	59,095	4	2,583	0	0	152	28,024	0	603	0	0	708	87,119	4	3,186	0	0
8/12	519	59,614	5	2,588	0	0	124	28,148	0	603	0	0	643	87,762	5	3,191	0	0
8/13	13	59,627	0	2,588	0	0	86	28,234	0	603	0	0	99	87,861	0	3,191	0	0
8/14	0	59,627	0	2,588	0	0	71	28,305	0	603	0	0	71	87,932	0	3,191	0	0
8/15	73	59,700	1	2,589	0	0	97	28,402	0	603	0	0	170	88,102	1	3,192	0	0
8/16	73	59,773	0	2,589	0	0	116	28,518	0	603	0	0	189	88,291	0	3,192	0	0
8/17	72	59,845	1	2,590	0	0	50	28,568	0	603	0	0	122	88,413	1	3,193	0	0
8/18	213	60,058	0	2,590	0	0	180	28,748	0	603	0	0	393	88,806	0	3,193	0	0
8/19	194	60,252	0	2,590	0	0	0	28,748	0	603	0	0	194	89,000	0	3,193	0	0
8/20	107	60,359	2	2,592	2	2	251	28,999	1	604	4	4	358	89,358	3	3,196	6	6
8/21	129	60,488	1	2,593	0	2	49	29,048	0	604	0	4	178	89,536	1	3,197	0	6
8/22	187	60,675	0	2,593	4	6	7	29,055	0	604	0	4	194	89,730	0	3,197	4	10
8/23	265	60,940	0	2,593	8	14	210	29,265	0	604	0	4	475	90,205	0	3,197	8	18
8/24	203	61,143	0	2,593	27	41	16	29,281	0	604	0	4	219	90,424	0	3,197	27	45
8/25	677	61,820	0	2,593	21	62	90	29,371	0	604	4	8	767	91,191	0	3,197	25	70
8/26	184	62,004	1	2,594	13	75	21	29,392	0	604	1	9	205	91,396	1	3,198	14	84
8/27	96	62,100	0	2,594	25	100	9	29,401	0	604	2	11	105	91,501	0	3,198	27	111
8/28	51	62,151	0	2,594	4	104	37	29,438	0	604	0	11	88	91,589	0	3,198	4	115
8/29	100	62,251	0	2,594	25	129	21	29,459	0	604	11	22	121	91,710	0	3,198	36	151
8/30	218	62,469	0	2,594	41	170	45	29,504	0	604	0	22	263	91,973	0	3,198	41	192
8/31	201	62,670	0	2,594	123	293	76	29,580	0	604	6	28	277	92,250	0	3,198	129	321
9/01	263	62,933	0	2,594	222	515	0	29,580	0	604	2	30	263	92,513	0	3,198	224	545
9/02	336	63,269	0	2,594	134	649	0	29,580	0	604	0	30	336	92,849	0	3,198	134	679
9/03	73	63,342	0	2,594	104	753	1	29,581	0	604	0	30	74	92,923	0	3,198	104	783
9/04	22	63,364	0	2,594	25	778	0	29,581	0	604	0	30	22	92,945	0	3,198	25	808

-Continued-

Date	Personal Use Catch						Subsistence Catch						Combined Catches					
	Sockeye		Chinook		Coho		Sockeye		Chinook		Coho		Sockeye		Chinook		Coho	
	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.
9/05	45	63,409	0	2,594	50	828	102	29,683	0	604	0	30	147	93,092	0	3,198	50	858
9/06	58	63,467	0	2,594	63	891	28	29,711	0	604	0	30	86	93,178	0	3,198	63	921
9/07	82	63,549	0	2,594	54	945	32	29,743	0	604	0	30	114	93,292	0	3,198	54	975
9/08	64	63,613	0	2,594	142	1,087	28	29,771	0	604	0	30	92	93,384	0	3,198	142	1,117
9/09	1	63,614	0	2,594	2	1,089	40	29,811	0	604	0	30	41	93,425	0	3,198	2	1,119
9/10	3	63,617	0	2,594	41	1,130	29	29,840	0	604	22	52	32	93,457	0	3,198	63	1,182
9/11	0	63,617	0	2,594	0	1,130	0	29,840	0	604	0	52	0	93,457	0	3,198	0	1,182
9/12	12	63,629	0	2,594	12	1,142	7	29,847	0	604	0	52	19	93,476	0	3,198	12	1,194
9/13	25	63,654	0	2,594	56	1,198	0	29,847	0	604	4	56	25	93,501	0	3,198	60	1,254
9/14	23	63,677	0	2,594	72	1,270	0	29,847	0	604	0	56	23	93,524	0	3,198	72	1,326
9/15	53	63,730	0	2,594	81	1,351	2	29,849	0	604	2	58	55	93,579	0	3,198	83	1,409
9/16	0	63,730	0	2,594	23	1,374	0	29,849	0	604	0	58	0	93,579	0	3,198	23	1,432
9/17	1	63,731	0	2,594	2	1,376	0	29,849	0	604	2	60	1	93,580	0	3,198	4	1,436
9/18	1	63,732	0	2,594	1	1,377	0	29,849	0	604	0	60	1	93,581	0	3,198	1	1,437
9/19	3	63,735	0	2,594	16	1,393	0	29,849	0	604	0	60	3	93,584	0	3,198	16	1,453
9/20	30	63,765	0	2,594	13	1,406	0	29,849	0	604	0	60	30	93,614	0	3,198	13	1,466
9/21	1	63,766	0	2,594	11	1,417	0	29,849	0	604	0	60	1	93,615	0	3,198	11	1,477
9/22	0	63,766	0	2,594	8	1,425	0	29,849	0	604	0	60	0	93,615	0	3,198	8	1,485
9/23	20	63,786	0	2,594	7	1,432	0	29,849	0	604	0	60	20	93,635	0	3,198	7	1,492
9/24	2	63,788	0	2,594	6	1,438	29	29,878	0	604	8	68	31	93,666	0	3,198	14	1,506
9/25	0	63,788	0	2,594	1	1,439	0	29,878	0	604	0	68	0	93,666	0	3,198	1	1,507
9/26	3	63,791	0	2,594	0	1,439	0	29,878	0	604	0	68	3	93,669	0	3,198	0	1,507
9/27	1	63,792	0	2,594	2	1,441	0	29,878	0	604	0	68	1	93,670	0	3,198	2	1,509
9/28	0	63,792	0	2,594	5	1,446	0	29,878	0	604	0	68	0	93,670	0	3,198	5	1,514
9/29	1	63,793	0	2,594	0	1,446	69	29,947	0	604	19	87	70	93,740	0	3,198	19	1,533
Total		63,793		2,594		1,446		29,947		604		87		93,740		3,198		1,533

Appendix B.2 Temporally stratified age and sex composition of sockeye salmon harvested in upper Copper River personal use and subsistence fisheries, 1990.

		Brood Year and Age Group												
		1987		1986		1985		1984			1983			
		0.2	1.1	0.3	1.2	2.1	1.3	2.2	1.4	2.3	3.2	2.4	3.3	Total
Stratum dates:	05/28 - 06/03													
Sampling dates:	06/02 - 06/03													
Sample size:	80													
Female	Percent of sample	2.5	0.0	23.8	6.3	0.0	8.8	2.5	0.0	15.0	0.0	0.0	0.0	58.8
	Number in catch	111	0	1,059	279	0	390	111	0	669	0	0	0	2,620
Male	Percent of sample	0.0	0.0	22.5	2.5	0.0	11.3	0.0	0.0	5.0	0.0	0.0	0.0	41.3
	Number in catch	0	0	1,003	111	0	502	0	0	223	0	0	0	1,839
Total	Percent of sample *	2.5	0.0	46.3	8.8	0.0	20.0	2.5	0.0	20.0	0.0	0.0	0.0	100.0
	Number in catch	111	0	2,062	390	0	892	111	0	892	0	0	0	4,459
	Standard error	78	0	250	142	0	201	78	0	201	0	0	0	
Stratum dates:	06/04 - 06/10													
Sampling dates:	06/08 - 06/10													
Sample size:	222													
Female	Percent of sample	0.0	0.0	13.5	2.3	0.0	9.9	1.4	0.5	5.4	0.0	0.0	0.5	33.3
	Number in catch	0	0	1,258	210	0	923	126	42	503	0	0	42	3,104
Male	Percent of sample	0.9	0.0	14.9	2.7	0.0	9.5	1.4	0.0	6.3	0.0	0.9	0.0	36.5
	Number in catch	84	0	1,384	252	0	881	126	0	587	0	84	0	3,397
Total	Percent of sample *	2.3	0.0	36.9	7.2	0.0	26.6	5.4	0.9	19.4	0.0	0.9	0.5	100.0
	Number in catch	210	0	3,439	671	0	2,475	503	84	1,803	0	84	42	9,311
	Standard error	93	0	302	162	0	277	142	59	248	0	59	42	
Stratum dates:	06/11 - 06/17													
Sampling dates:	06/14 - 06/17													
Sample size:	233													
Female	Percent of sample	0.4	0.0	1.3	1.3	0.0	2.6	0.9	0.0	3.4	0.0	0.0	0.0	9.9
	Number in catch	64	0	193	193	0	385	128	0	514	0	0	0	1,477
Male	Percent of sample	1.3	0.0	2.6	0.9	0.0	5.2	1.3	0.0	5.2	0.0	0.0	0.4	16.7
	Number in catch	193	0	385	128	0	771	193	0	771	0	0	64	2,505
Total	Percent of sample *	3.0	0.0	15.0	9.0	0.0	34.8	7.3	0.4	29.6	0.0	0.4	0.4	100.0
	Number in catch	450	0	2,248	1,349	0	5,202	1,092	64	4,431	0	64	64	14,964
	Standard error	168	0	351	281	0	468	256	64	449	0	64	64	
Stratum dates:	06/18 - 06/24													
Sampling dates:	06/22 - 06/24													
Sample size:	252													
Female	Percent of sample	0.0	0.0	2.0	6.3	0.0	9.1	4.8	0.0	9.9	0.0	0.0	0.8	32.9
	Number in catch	0	0	265	848	0	1,219	636	0	1,325	0	0	106	4,397
Male	Percent of sample	0.4	0.0	2.4	5.2	0.0	8.7	2.0	0.0	5.2	0.0	0.0	0.0	23.8
	Number in catch	53	0	318	689	0	1,166	265	0	689	0	0	0	3,179
Total	Percent of sample *	1.6	0.0	8.3	18.3	0.0	36.9	8.7	0.8	24.6	0.0	0.0	0.8	100.0
	Number in catch	212	0	1,113	2,437	0	4,927	1,166	106	3,285	0	0	106	13,351
	Standard error	105	0	233	326	0	407	238	75	363	0	0	75	
Stratum dates:	06/25 - 07/01													
Sampling dates:	06/29 - 07/01													
Sample size:	143													
Female	Percent of sample	0.7	0.0	3.5	8.4	0.0	13.3	4.9	0.0	6.3	0.0	0.0	0.0	37.1
	Number in catch	70	0	351	843	0	1,334	492	0	632	0	0	0	3,721
Male	Percent of sample	0.0	0.0	4.2	4.9	0.0	16.1	0.7	0.0	4.9	0.0	0.0	0.0	30.8
	Number in catch	0	0	421	492	0	1,615	70	0	492	0	0	0	3,090
Total	Percent of sample *	1.4	0.0	14.7	20.3	0.0	39.2	9.1	0.0	15.4	0.0	0.0	0.0	100.0
	Number in catch	140	0	1,475	2,036	0	3,932	913	0	1,545	0	0	0	10,041
	Standard error	99	0	298	339	0	411	242	0	304	0	0	0	

-Continued-

Appendix B.2 (page 2 of 3)

		Brood Year and Age Group												
		1987		1986		1985		1984		1983				
		0.2	1.1	0.3	1.2	2.1	1.3	2.2	1.4	2.3	3.2	2.4	3.3	Total
Stratum dates: 07/02 - 07/08														
Sampling dates: 07/06 - 07/08														
Sample size: 224														
Female	Percent of sample	0.4	0.0	3.6	12.5	0.0	15.6	4.9	0.0	3.1	0.0	0.0	0.0	40.2
	Number in catch	26	0	209	731	0	914	287	0	183	0	0	0	2,350
Male	Percent of sample	2.2	0.4	4.0	8.5	0.0	11.2	3.1	0.0	5.8	0.0	0.0	0.0	35.3
	Number in catch	131	26	235	496	0	653	183	0	339	0	0	0	2,062
Total	Percent of sample *	2.7	0.4	12.1	28.6	0.0	33.5	9.4	0.0	13.4	0.0	0.0	0.0	100.0
	Number in catch	157	26	705	1,671	0	1,958	548	0	783	0	0	0	5,848
	Standard error	63	26	128	177	0	185	114	0	133	0	0	0	
Stratum dates: 07/09 - 07/15														
Sampling dates: 07/13 - 07/14														
Sample size: 308														
Female	Percent of sample	2.6	0.0	1.6	19.5	0.6	15.9	9.4	0.0	3.6	0.3	0.0	0.0	53.6
	Number in catch	222	0	139	1,667	56	1,361	806	0	306	28	0	0	4,584
Male	Percent of sample	1.6	0.3	1.0	9.1	0.6	14.6	1.3	0.0	1.0	0.0	0.0	0.0	29.5
	Number in catch	139	28	83	778	56	1,250	111	0	83	0	0	0	2,528
Total	Percent of sample *	5.5	0.6	4.2	33.4	1.3	37.0	11.7	0.0	5.8	0.3	0.0	0.0	100.0
	Number in catch	472	56	361	2,861	111	3,167	1,000	0	500	28	0	0	8,556
	Standard error	112	39	98	230	55	236	157	0	115	28	0	0	
Stratum dates: 07/16 - 07/22														
Sampling dates: 07/20 - 07/22														
Sample size: 269														
Female	Percent of sample	1.1	0.0	1.9	14.9	0.0	31.6	2.2	0.4	3.0	0.0	0.0	0.0	55.0
	Number in catch	67	0	111	892	0	1,895	134	22	178	0	0	0	3,300
Male	Percent of sample	1.9	0.0	0.4	10.8	0.0	18.6	1.5	0.0	3.7	0.0	0.4	0.0	37.2
	Number in catch	111	0	22	647	0	1,115	89	0	223	0	22	0	2,230
Total	Percent of sample *	3.0	0.0	2.2	27.1	0.0	55.4	4.5	0.4	7.1	0.0	0.4	0.0	100.0
	Number in catch	178	0	134	1,628	0	3,322	268	22	424	0	22	0	5,998
	Standard error	62	0	54	163	0	182	76	22	94	0	22	0	
Stratum dates: 07/23 - 07/29														
Sampling dates: 07/27 - 07/29														
Sample size: 191														
Female	Percent of sample	1.0	0.0	2.1	23.0	0.0	19.9	1.6	0.5	1.0	0.0	0.0	0.0	49.2
	Number in catch	39	0	79	869	0	750	59	20	39	0	0	0	1,856
Male	Percent of sample	0.0	1.0	1.6	21.5	0.0	23.6	1.6	0.0	1.6	0.0	0.0	0.0	50.8
	Number in catch	0	39	59	810	0	889	59	0	59	0	0	0	1,916
Total	Percent of sample *	1.0	1.0	3.7	44.5	0.0	43.5	3.1	0.5	2.6	0.0	0.0	0.0	100.0
	Number in catch	39	39	138	1,679	0	1,639	118	20	99	0	0	0	3,772
	Standard error	28	28	51	136	0	136	48	20	44	0	0	0	
Stratum dates: 07/30 - 08/05														
Sampling dates: 08/03 - 08/04														
Sample size: 361														
Female	Percent of sample	0.6	1.1	0.8	24.7	0.0	21.6	1.4	0.0	2.8	0.0	0.0	0.0	52.9
	Number in catch	37	73	55	1,627	0	1,426	91	0	183	0	0	0	3,492
Male	Percent of sample	0.3	1.1	0.6	23.5	0.3	16.9	2.5	0.0	1.9	0.0	0.0	0.0	47.1
	Number in catch	18	73	37	1,554	18	1,115	165	0	128	0	0	0	3,108
Total	Percent of sample *	0.8	2.2	1.4	48.2	0.3	38.5	3.9	0.0	4.7	0.0	0.0	0.0	100.0
	Number in catch	55	146	91	3,181	18	2,541	256	0	311	0	0	0	6,600
	Standard error	32	51	41	174	18	169	67	0	74	0	0	0	

-Continued-

Appendix B.2 (page 3 of 3)

		Brood Year and Age Group												Total	
		1987		1986		1985		1984		1983					
		0.2	1.1	0.3	1.2	2.1	1.3	2.2	1.4	2.3	3.2	2.4	3.3		
Stratum dates:		08/06 - 09/30													
Sampling dates:		08/10 - 08/12													
Sample size:		202													
Female	Percent of sample	0.0	1.5	0.5	19.3	0.0	29.2	2.5	0.5	5.0	0.0	0.0	0.0	58.4	
	Number in catch	0	161	54	2,093	0	3,166	268	54	537	0	0	0	6,332	
Male	Percent of sample	0.5	0.5	1.0	18.8	0.0	14.9	3.0	0.0	3.0	0.0	0.0	0.0	41.6	
	Number in catch	54	54	107	2,039	0	1,610	322	0	322	0	0	0	4,508	
Total	Percent of sample *	0.5	2.0	1.5	38.1	0.0	44.1	5.4	0.5	7.9	0.0	0.0	0.0	100.0	
	Number in catch	54	215	161	4,132	0	4,776	590	54	859	0	0	0	10,840	
	Standard error	54	107	92	371	0	380	173	54	206	0	0	0		
Strata Combined:		05/28 - 09/30													
Sampling dates:		06/02 - 08/12													
Sample size:		2,485													
Female	Percent of sample	0.7	0.2	4.0	10.9	0.1	14.7	3.3	0.1	5.4	0.0	0.0	0.2	39.7	
	Number in catch	637	234	3,773	10,250	56	13,764	3,139	138	5,068	28	0	148	37,233	
Male	Percent of sample	0.8	0.2	4.3	8.5	0.1	12.3	1.7	0.0	4.2	0.0	0.1	0.1	32.4	
	Number in catch	782	220	4,056	7,995	74	11,565	1,582	0	3,916	0	106	64	30,361	
Total	Percent of sample *	2.2	0.5	12.7	23.5	0.1	37.2	7.0	0.4	15.9	0.0	0.2	0.2	100.0	
	Number in catch	2,078	482	11,927	22,035	129	34,831	6,566	350	14,931	28	170	212	93,740	
	Standard error	298	130	680	802	58	992	536	130	785	28	90	107		

* The total percent of sample may not sum to 100% because the total summary includes unsexed fish.

Appendix B.3. Estimated age and sex composition of chinook salmon sport fishing harvests at two locations in the upper Copper River area, 1990.

		Brood Year and Age Group				
		1986	1985	1984	1983	
		1.2	1.3	1.4	1.5	Total
<hr/>						
Gulkana River						
Sampling Dates: 06/29–07/13						
Sample Size: 55						
Female	Number of Samples	0	20	11	0	31
	Percent of Sample	0.0	36.4	20.0	0.0	56.4
Male	Number of Samples	0	15	9	0	24
	Percent of Sample	0.0	27.3	16.4	0.0	43.6
Total	Number of Samples	0	35	20	0	55
	Percent of Sample	0.0	63.6	36.4	0.0	100.0
	Standard Error	0	6.6	6.6	0	
<hr/>						
Klutina River						
Sampling Dates: 07/11–07/29						
Sample Size: 95						
Female	Number of Samples	19	37	1	0	57
	Percent of Sample	20.0	38.9	1.1	0.0	60.0
Male	Number of Samples	15	21	0	2	38
	Percent of Sample	15.8	22.1	0.0	2.1	40.0
Total	Number of Samples	34	58	1	2	95
	Percent of Sample	35.8	61.1	1.1	2.1	100.0
	Standard Error	4.9	5.0	1.0	1.5	

APPENDIX C: SALMON ESCAPEMENTS TO COASTAL STREAMS OF THE COPPER RIVER DELTA AND THE BERING RIVER

Appendix C.1. Aerial escapement indices for sockeye salmon returning to the Copper River delta, and the Bering River, by date and location, 1990.

Copper River delta ^a System and Drainage Survey System		Aerial Escapement Indices by Survey Date							
		20 May	05 June	08 June	12 June	22 June	24 June	26 June	03 July
Eyak River	Eyak River	75	0	0	0	NS	200	0	NS
	West shore beaches	0	0	20	152	NS	80	180	65
	Middle Arm beaches ^b	20	20	80	90	NS	270 *	140	265
	North shore beaches	0	0	0	0	NS	0	50	20
	Hatchery Creek delta	0	6	0	80	NS	400	500	13
	Hatchery Creek	NS	0	0	0	NS	NS	120	75
	Power Creek delta	NS	0	NS	NS	NS	NS	NS	0
	Power Creek	NS	NS	NS	NS	NS	NS	NS	0
Ibek Creek	Ibek Creek	NS	NS	NS	NS	NS	NS	NS	0
Alganik Slough	Alganik Slough	NS	NS	NS	NS	0	NS	0	NS
	McKinley Lake	NS	0	NS	0	0	NS	0	2,450
	Salmon Creek west fork	NS	0	0	0	0	NS	0	600
	Salmon Creek east fork	NS	0	0	0	0	NS	0	30
26/27 Mile Creek	26/27 Mile Creek	0	0	0	0	600	NS	75 +	1,400
39 Mile Creek	39 Mile Creek	NS	0	0	0	0	NS	0	1,070
Goat Mountain Creek	Goat Mountain Creek	NS	NS	NS	NS	NS	NS	NS	0
Pleasant Creek	Pleasant Creek	NS	0	0	0	560 +	NS	1,350	3,190
Martin River	Martin River - lower	0	1,140	1,140	560	575	NS	1,875	1,540
	Ragged Point River	NS	NS	NS	0	0	NS	0	1,000
	Ragged Point Lake outlet	NS	NS	NS	0	0	NS	0	0
	Ragged Point Lake	NS	NS	NS	0	0	NS	0	0
	Martin River - upper	NS	0	200	1,400	600	NS	1,800	1,900
	Martin Lake outlet ^b	NS	0	0	1,200	1,700	NS	5,100	* 1,000
	Martin Lake ^b	NS	NS	0	1,900	3,100	NS	6,400 ^c	* 6,800
	Martin Lake feeders	NS	NS	NS	0	1	NS	130	* 600
	Pothole River	NS	NS	NS	0	0	NS	0	155
	Pothole Lake outlet	NS	NS	NS	0	0	NS	0	0
	Pothole Lake	NS	NS	NS	0	0	NS	0	1,200
	Little Martin Lake outlet	NS	NS	0	0	120	NS	0	0
	Little Martin Lake	NS	NS	NS	0	0	NS	510	1,120
	Tokun Springs	NS	NS	0	100	0	NS	0	0
	Tokun River	NS	NS	0	90	140	NS	680	950
	Tokun Lake outlet	NS	NS	0	0	330	NS	300	640
	Tokun Lake	NS	NS	0	0	230	NS	200	1,300
Martin River Slough	Martin River Slough	NS	0	0	310	7,300	NS	13,900	* 9,960
Copper River Aerial Survey Daily Total		95	1,166	1,440	5,882	15,256	1,030	33,310	37,343

-Continued-

		Aerial Escapement Indices by Survey Date							
Copper River delta ^a System and Drainage Survey System		14 July	19 July	01 Aug	16 Aug	24 Aug	29 Aug	08 Sept	25 Sept
Eyak River	Eyak River	NS	NS	NS	NS	NS	NS	NS	NS
	West shore beaches	900	1,550	3,400 *	600	1,800	2,500	1,700	NS
	Middle Arm beaches ^b	1,000	2,100	1,800	2,100	4,000	4,300 *	3,200	NS
	North shore beaches	0	0	20	280	300	215	1,100 *	NS
	Hatchery Creek delta	300	40	450	120	900	1,900	1,700 *	NS
	Hatchery Creek	900+*	350+	140 +	55	300	300	500 *	NS
	Power Creek delta	75 *	NS	NS	NS	0	NS	NS	NS
	Power Creek	0 *	NS	NS	NS	0	NS	NS	NS
Ibek Creek	Ibek Creek	NS	NS	NS	NS	160 *	90	80	0
Alganik Slough	Alganik Slough	NS	NS	NS	NS	0 *	0	0	NS
	McKinley Lake	350	3,150 +	510	303	1,400 *	1,700	1,400	120
	Salmon Creek west fork	0	200	1,700 +	1,600	1,600 *	1,000	1,400	0
	Salmon Creek east fork	0	0	210	30	400 *	0	0	0
26/27 Mile Creek	26/27 Mile Creek	2,620	3,360 *	2,170	400	1,400	550	470	80
39 Mile Creek	39 Mile Creek	1,700	3,200	4,800	2,670	5,000 *	3,600	2,660	200
Goat Mountain Creek	Goat Mountain Creek	0	350	NC	NC	420 *	0	0	0
Pleasant Creek	Pleasant Creek	2,160	500	0	0	0	0	0	NC
Martin River	Martin River - lower	200	460	NC	0	0	0	0	NS
	Ragged Point River	850	4,000	4,000 *	1,200	1,000	1,400	140	0
	Ragged Point Lake outlet	0	0	1,100 *	300	1,800	800	0	300
	Ragged Point Lake	0	0	3,850 *	2,400	3,600	3,800	5,400	2,800
	Martin River - upper	300	2,400	NC	30	200	400	800	NC
	Martin Lake outlet ^b	0 +	2,000	NC	420	0	75	100	NC
	Martin Lake ^b	2,500 +	1,275	80 +	50	200	40	130	200
	Martin Lake feeders	2,200 +	4,300	2,650	1	0	0	NC	0
	Pothole River	100	600	100 +	0	60 +	90 *	100	0
	Pothole Lake outlet	0 +	400 +	NC	0	0	400 *	300	0
	Pothole Lake	0 +	500 +	NC	100 +	700 +	1,700 *	1,500	600
	Little Martin Lake outlet	0	0	0	0	30	50	100 *	
	Little Martin Lake	1,470	1,300	1,700	620	2,650	2,180	5,600	*1,100
	Tokum Springs	0	100 *	60	0	80	0	0	0
	Tokum River	560	900	1,000	130	1,050	720 *	700	0
	Tokum Lake outlet	NC	0	100	110	0	0 *	0	0
	Tokum Lake	NC	2,800	1,100	445 +	2,600	3,380 *	2,600	1,400
Martin River Slough	Martin River Slough	NS	6,300	3,110	155	13	40	0	0
Copper River Aerial Survey Daily Total		18,185	42,135	34,050	14,119	31,663	31,230	31,680	6,800

-Continued-

Copper River delta ^a System and Drainage Survey System		Aerial Escapement Indices by Survey Date			Estimated Escapement	
		03 Oct	16 Oct	30 Oct	Site ^d	System ^c
Eyak River	Eyak River	NS	NS	NS	0	12,375
	West shore beaches	0	0	0	3,400	
	Middle Arm beaches ^b	100	0	0	4,570	
	North shore beaches	215	340	0	1,100	
	Hatchery Creek delta	0	0	0	1,700	
	Hatchery Creek	150	110	0	1,400	
	Power Creek delta	0	0	0	75	
	Power Creek	75	130 *	0	130	
Ibek Creek	Ibek Creek	0	0	0	160	160
Alganik Slough	Alganik Slough	NC	0	0	0	3,400
	McKinley Lake	100	50	0	1,400	
	Salmon Creek west fork	0	0	0	1,600	
	Salmon Creek east fork	0	0	0	400	
26/27 Mile Creek	26/27 Mile Creek	0	0	0	3,360	3,360
39 Mile Creek	39 Mile Creek	75	0	20	5,000	5,000
Goat Mountain Creek	Goat Mountain Creek	0	0	0	420	420
Pleasant Creek	Pleasant Creek	0	NS	NS	3,190	3,190
Martin River	Martin River - lower	0	NC	0	0	0
	Ragged Point River	0	0	0	4,000	8,950
	Ragged Point Lake outlet	0	0	0	1,100	
	Ragged Point Lake	1,500	300	10	3,850	
	Martin River - upper	350 *	200	0	350	350
	Martin Lake outlet ^b	10 *	0	0	5,110	11,250
	Martin Lake ^b	1,800 *	380	500	6,010	
	Martin Lake feeders	0	0	0	130	
	Pothole River	0	0	0	90	2,190
	Pothole Lake outlet	0	0	0	400	
	Pothole Lake	700	850	1,100	1,700	
	Little Martin Lake outlet	0	0	0	100	5,700
	Little Martin Lake	800	100	NC	5,600	
	Tokum Springs	0	0	0	100	4,200
	Tokum River	0	0	0	720	
	Tokum Lake outlet	50	0	0	0	
	Tokum Lake	900	450	100	3,380	
Martin River Slough	Martin River Slough	0	0	0	13,900	13,900
Copper River Aerial Survey Daily Total		6,825	2,910	1,730		74,445

-Continued-

		Aerial Escapement Indices by Survey Date							
Bering River delta ^a									
System and Drainage	Survey System	08 June	12 June	22 June	26 June	03 July	19 July	01 Aug	16 Aug
Bering River	Bering River	0	560	940	1,200	180	0	NC	0
	Bering Lake	0	730+	120	690	14,400	11,775	820	220
	Dick Creek	0	0	0	0	0	4,550	13,100	1,900
	Shepherd Creek - lagoon	0	0	0+	620	0	0	50+	0
	Shepherd Creek	NS	NS	NS	NS	0	240	200	460
	Carbon Creek	NS	NS	NS	NS	NS	100	800	200
	Maxwell Creek	NS	NS	NS	NS	NS	0	NS	0
	Trout Creek	NS	NS	NS	NS	NS	NC	0	0
	Clear Creek	NS	NS	NS	NS	NS	700	600	50
	Kushtaka Lake	NS	NS	NS	NS	NS	20	40	80
	Shockum Creek	NS	NS	NS	NS	NS	0	120	95
Katalla River	Katalla River	0	0	50	240	1,900SP	1,200	20	100
Bering River Aerial Survey Daily Total		0	1,290	1,110	2,750	16,480	18,585	15,750	3,105

		Aerial Escapement Indices by Survey Date						
Bering River delta ^a								
System and Drainage	Survey System	24 Aug	29 Aug	03 Sept	08 Sept	25 Sep	03 Oct	16 Oct
Bering River	Bering River	0	0	NC	0	0	NC	0
	Bering Lake	70	0	20+	100	0	0	0
	Dick Creek	360	80	30	30	0	0	0
	Shepherd Creek - lagoon	0	0	NC	0	NS	NS	NS
	Shepherd Creek	NS	NS	NS	0	NS	NS	NS
	Carbon Creek	NS	NS	NS	NS	NS	NS	NS
	Maxwell Creek	NS	NS	NS	NS	NS	NS	NS
	Trout Creek	0	0	0	0	NS	0	NS
	Clear Creek	15	0	0	0	NS	0	NS
	Kushtaka Lake	136	30	0	0	NS	0	NS
	Shockum Creek	10	8	20	15	NS	0	NS
Katalla River	Katalla River	110	15	NC	40	0	0	0
Bering River Aerial Survey Daily Total		701	133	70	185	0	0	0

-Continued-

Bering River delta ^a System and Drainage	Survey System	Estimated Escapement	
		Site ^b	System ^c
Bering River	Bering River	0	16,325
	Bering Lake	11,775	
	Dick Creek	4,550	
	Shepherd Creek - lagoon	0	1,260
	Shepherd Creek	460	
	Carbon Creek	800	
	Maxwell Creek	0	
	Trout Creek	0	0
	Clear Creek	700	700
	Kushtaka Lake	136	256
	Shockum Creek	120	
Katalla River	Katalla River	1,200	1,200
Bering River Aerial Survey Daily Total			19,741
Copper River Aerial Survey Daily Total			74,445
Copper and Bering River Aerial Survey Combined Total			94,186

- a The survey sites represent most of the known sockeye salmon spawning locations in the Bering River drainage. Weather permitting, the sites are surveyed weekly. The surveys provide information about the relative strength of escapement among years and within a year, time for spawning sites, and the relative escapement strength among sites. The indices are not intended to provide an actual estimate of escapement for coastal stocks, but they have been for that purpose in the absence of any other escapement estimating method. The abbreviations used in the following table are: NS= no survey, NC= surveyed but no count due to poor conditions. The + sign after some counts indicate that the count is the minimum estimate of seen in less than ideal conditions. The * symbol indicates that this survey count was used as the peak survey for the site without duplication of counts for survey sites along migratory corridors (see footnote b).
- b The sites typically have very protracted run timing or two temporally segregated spawning populations at the same site. Aerial counts from more than one day may be restricted and used in the escapement estimate if the surveyor indicates that these counts represented different fish.
- c The Pothole Lake system escapement of 2,190 sockeye was subtracted from the peak Martin Lake estimate.
- d The escapement estimates for each site is in the restricted survey estimate. Where the survey site is a terminal spawning area the peak count is used however, if the site is a schooling area for migratory fish bound for sites further upstream the count which minimizes possible duplication counts across dates selected.
- e The sum of the estimates by site within a system

Appendix C.2. Aerial escapement indices for coho salmon returning to the Copper River delta and Bering River by date and location, 1990.

Copper River delta ^a System and Drainage	Survey System	Aerial Escapement Indices by Survey Date							
		16 Aug	24 Aug	29 Aug	08 Sept	25 Sept	03 Oct	16 Oct	30 Oct
Eyak River	Eyak River	NS	NS	NS	NS	NS	NS	NS	NS
	West shore beaches	0	0	1,158	4,100	165+	3,890+	3,975 *	810
	Middle Arm beaches	0	0	0	0	NS	800	600	220
	North shore beaches	0	0	0	0	NS	460	1,000 *	250
	Hatchery Creek delta	0	0	0	0	NS	500	900 *	1,410
	Hatchery Creek	0	0	0	0	NS	350	1,040 *	290
	Power Creek delta	NS	NS	0	NS	NS	500	500 *	800
	Power Creek	NS	NS	0	NS	NS	160	150 *	720
Ibek Creek	Ibek Creek	NS	450	860	1,780	520+	3,280+	3,950 *	1,750
Scott River	Scott River	NS	0	0	0	200	NS	280	610*
	Elsner River	NS	0	0	0	NS	80	0	45*
	Scott Lake	NS	0	120	0	180	300	225	450*
Alganik Slough	Alganik Slough	NS	NS	NC	NC	NS	NC	NS	200*
	18/20 Mile Creek	NS	3	36	400	430+	430+*	300	320
	McKinley Lake	0	0	0	0	310+	375+*	350	100
	Salmon Creek west fork	0	0	200	200	140+	170+*	200	100
	Salmon Creek east fork	0	0	600	560	400	600+	1,510	1,800*
26/27 Mile Creek	26/27 Mile Creek	0	0	2	140	323+	180+	NS	860*
39 Mile Creek	39 Mile Creek	0	100	530	1,520	900+	2,230+*	2,200	1,100
Goat Mountain Creek	Goat Mountain Creek	NS	210	120	410	1,050	1,340 *	650	600
Pleasant Creek	Pleasant Creek	0	0	1 *	0	NC	0	NS	NS
Martin River	Martin River- lower	0	150	260	2,500	NS	730+	NC	NS
	Ragged Point River	0	3	130	80	300	230	200	720*
	Ragged Point Lake outlet	0	0	0	0	0	0	0	0
	Ragged Point Lake	0	0	0	0	100 *	0	0	0
	Martin River- upper	0	135	1,700	1,800	NC	1,750+	1,800	400*
	Martin Lake outlet	0	0	210	200	NC	50+	0*	0
	Martin Lake	0	0	0	0	280+	NC	100*	0
	Martin Lake feeders	0	0	0	0	0	40	220*	170
	Pothole River	0	0	0	0	NC	320	510	500*
	Pothole Lake outlet	0	0	0	0	NC	200+	450	1,550*
	Pothole Lake	0	0	0	0	500+	300+	340	620*
	Little Martin Lake outlet	0	10	70	1,240	6,200	6,900 *	4,000	2,200
	Little Martin Lake	0	0	0	0	1,700SP	500 *	0	NC
	Tokum Springs	0	0	30	320	785	1,150 *	1,120	425
	Tokum River	0	0	0	65	560	480	380	800*
	Tokum Lake outlet	0	0	0	0	200	200 *	0	0
	Tokum Lake	0	0	0	0	300	100 *	0	0
Martin River Slough	Martin River Slough	10	400	345	7,700 *	4,370+	4,700	5,970	1,870
Copper River Aerial Survey Daily Totals		10	1,511	6,372	23,015	19,913	33,295	39,753	21,690

-Continued-

Copper River delta ^a System and Drainage Survey System		Estimated Escapement	
		Site ^b	System ^c
Eyak River	Eyak River	0	8,365
	West shore beaches	3,975	
	Middle Arm beaches	800	
	North Shore beaches	1,000	
	Hatchery Creek delta	900	
	Hatchery Creek	1,040	
	Power Creek delta	500	
	Power Creek	150	
Ibek Creek	Ibek Creek	3,950	3,950
Scott River	Scott River	610	1,105
	Elsner Lake	45	
	Scott Lake	450	
Alganik Slough	Alganik Slough	200	2,975
	18/20 Mile Creek	430	
	McKinley Lake	375	
	Salmon Creek west fork	170	
	Salmon Creek east fork	1,800	
26/27 Mile Creek	26/27 Mile Creek	860	860
39 Mile Creek	39 Mile Creek	2,230	2,230
Goat Mountain Creek	Goat Mountain Creek	1,340	1,340
Pleasant Creek	Pleasant Creek	1	1
Martin River	Martin River- lower	0	0
	Ragged Point River	720	820
	Ragged Point Lake outlet		
	Ragged Point Lake	100	
	Martin River- upper	400	400
	Martin Lake outlet	0	320
	Martin Lake	100	
	Martin Lake Feeders	220	
	Pothole River	500	2,670
	Pothole Lake outlet	1,550	
	Pothole Lake	620	
	Little Martin Lake outlet	6,900	7,400
	Little Martin Lake	500	
	Tokum Springs	1,150	2,250
	Tokum River	800	
	Tokum Lake outlet	200	
	Tokum Lake	100	
Martin River Slough	Martin River Slough	7,700	7,700
Copper River Aerial Survey Daily Totals			42,386

-Continued-

Bering River delta System and Drainage	Survey System	Aerial Escapement Indices by Survey Date							Estimated Escapement	
		16 Aug	24 Aug	29 Aug	08 Sep	25 Sept	03 Oct	16 Oct	Site ^b	System ^c
Bering River	Bering River	0	1,400	2,090 ^d *	1,440	1,100+	500	120	1,440	3,540
	Bering Lake	0	80	110	400 *	50+	325	160	400	
	Dick Creek	0	100	440	1,500 *	300+	1,160	1,560	1,500	
	Shepherd Creek - lagoon	0	0	0	0	NS	NC	NS	0	100
	Shepherd Creek	0	NS	NS	100 *	NS	NS	NS	100	
	Carbon Creek	0	NS	NS	0	NS	NS	NS	0	
	Maxwell Creek	0	NS	NS	NS	NS	NS	NS	0	
	Trout Creek	0	0	0	0	NS	0	NS	0	
	Clear Creek	0	0	0	0	NS	0	NS	0	
	Kushtaka Lake	0	0	0	0	NS	0	NS	0	
	Shockum Creek	0	0	0	0	NS	0	NS	0	
	Katalla River	350	1,000	1,060	2,960 *	200+	300+	20	2,960	2,960
	Gandil River	0	140	120	600	NS	910 *	240	910	3,810
Nichawak River	Nichawak River	0	100	280	1,550	NS	2,900 *	1,320	2,900	
Controller Bay Strms.	Campbell River	NS	150 *	6	NC	NS	0	NS	150	14,390
	Edwards River	NS	1,200	3,030	12,100	NS	8,100	NS	12,100	
	Okalee River	NS	0	1	1,500+	NS	1,900+	NS	1,900	
	Other clear streams	NS	90	115	240 *	NS	110	NS	240	
Bering River Aerial Survey Daily Total		350	4,260	7,252	22,390	1,650+	16,205	3,420		24,800
Anticipated Escapement		1,014	891	7,731	13,105	18,089	15,020			21,450
Copper River Aerial Survey Daily Total										42,386
Copper and Bering River Aerial Survey Combined Total										67,186

a The survey sites represent most of the known sockeye salmon spawning locations in the Bering River drainage. Weather permitting, the sites are surveyed weekly. The surveys provide information about the relative strength of escapement among years and within a year, time for spawning sites, and the relative escapement strength among sites. The indices are not intended to provide an actual estimate of escapement for coastal stocks, but they have been for the purpose in the absence of any other escapement estimating method. The abbreviations used in the following table are: NS= no survey, NC= surveyed but no count due to poor conditions. The + sign after some counts indicate that the count is the minimum estimate of seen in less than ideal conditions. The * symbol indicates that this survey count was used as the peak survey for the site without duplication of counts for survey sites along migratory corridors (see footnote b).

b The escapement estimates for each site is in the astricted survey estimate. Where the survey site is a terminal spawning area the peak count is used; however, if the site is a schooling area for migratory fish bound for sites further upstream, the count which minimizes possible duplication of counts across dates is selected.

c The sum of the estimates, by site, within a system.

d Bering River counts include 1,640 peak coho salmon observed in the Don Miller Hills tributaries.

Appendix C.3. Estimated age and sex composition of sockeye salmon in the total indexed escapements to the Copper River delta and Bering River drainage, 1990.

		Brood Year and Age Group												
		1988	1987		1986			1985			1984		1983	
		0.1	0.2	1.1	0.3	1.2	2.1	0.4	1.3	2.2	1.4	2.3	1.5	Total
Copper River delta Escapements														
Stratum Dates: 05/20 ~ 10/30														
Sampling Dates: 06/18 ~ 08/28														
Sample Size: 6,224														
Female	Percent of Sample	0.0	2.6	0.1	4.8	12.3	0.0	0.0	20.1	1.0	0.1	1.2	0.0	42.2
	Number in Escapement	0	1,802	46	3,310	8,524	0	7	14,002	675	101	849	7	29,324
Male	Percent of Sample	0.3	6.1	2.5	3.2	28.6	0.1	0.0	13.9	2.3	0.1	0.7	0.0	57.8
	Number in Escapement	235	4,232	1,735	2,210	19,903	85	9	9,656	1,574	44	500	0	40,182
Total	Percent of Sample	0.3	8.7	2.6	7.9	40.9	0.1	0.0	34.0	3.2	0.2	1.9	0.0	100.0
	Number in Escapement	235	6,034	1,780	5,524	28,427	85	16	23,658	2,249	145	1,350	7	69,510
	Standard Error	73	311	185	268	500	45	11	458	186	35	135	7	
Bering River Escapements														
Stratum Dates: 06/12 ~ 08/16														
Sampling Dates: 07/11 ~ 08/14														
Sample Size: 1,026														
Female	Percent of Sample	0.0	0.8	0.0	8.8	12.5	0.0	0.0	18.5	0.0	0.0	0.3	0.0	41.0
	Number in Escapement	0	146	0	1,524	2,185	0	0	3,222	2	6	56	0	7,141
Male	Percent of Sample	0.2	2.6	0.8	4.0	28.1	0.0	0.0	23.0	0.0	0.0	0.2	0.0	58.8
	Number in Escapement	29	449	144	692	4,888	0	1	3,996	3	0	38	0	10,240
Total	Percent of Sample	0.2	3.4	0.8	12.7	40.8	0.0	0.0	41.5	0.0	0.0	0.5	0.0	100.0
	Number in Escapement	29	595	144	2,217	7,101	0	1	7,218	5	6	94	0	17,410
	Standard Error	29	127	64	235	340	1	340	2	2	28	0	0	
Combined Copper River delta and Bering River Escapements														
Stratum Dates: 05/20 ~ 10/30														
Sampling Dates: 06/18 ~ 08/28														
Sample Size: 7,250														
Female	Percent of Sample	0.0	2.2	0.1	5.6	12.3	0.0	0.0	19.8	0.8	0.1	1.0	0.0	42.0
	Number in Escapement	0	1,948	46	4,834	10,708	0	7	17,224	677	107	905	7	36,465
Male	Percent of Sample	0.3	5.4	2.2	3.3	28.5	0.1	0.0	15.7	1.8	0.1	0.6	0.0	58.0
	Number in Escapement	264	4,681	1,879	2,902	24,791	85	10	13,652	1,577	44	539	0	50,423
Total	Percent of Sample	0.3	7.6	2.2	8.9	40.9	0.1	0.0	35.5	2.6	0.2	1.7	0.0	100.0
	Number in Escapement	264	6,629	1,925	7,740	35,528	85	17	30,876	2,254	151	1,444	7	86,920
	Standard Error	78	336	196	356	605	45	340	458	186	45	135	7	

Appendix C.4. Estimated age and sex composition of the sockeye salmon escapements to the Copper River delta, 1990.

		Brood Year and Age Group												Total	
		1988	1987		1986			1985			1984		1983		
		0.1	0.2	1.1	0.3	1.2	2.1	0.4	1.3	2.2	1.4	2.3	1.5		
Eyak Lake -- South Beaches															
Stratum Dates:		06/08 -- 06/26													
Sampling Date:		07/18													
Sample Size:		216													
Female	Percent of Sample	0.0	1.4	0.0	7.9	3.2	0.0	0.0	28.2	0.5	0.0	2.8	0.0	44.0	
	Number in Escapement	0	22	0	122	50	0	0	438	7	0	43	0	682	
Male	Percent of Sample	0.0	10.2	0.0	1.9	31.0	0.0	0.0	9.7	1.9	0.0	1.4	0.0	56.0	
	Number in Escapement	0	158	0	29	481	0	0	151	29	0	22	0	868	
Total	Percent of Sample	0.0	11.6	0.0	9.7	34.3	0.0	0.0	38.0	2.3	0.0	4.2	0.0	100.0	
	Number in Escapement	0	179	0	151	531	0	0	588	36	0	65	0	1,550	
	Standard Error	0	34	0	31	50	0	0	51	16	0	21	0		
Stratum Dates: 07/03 -- 09/08															
Sampling Date:		06/07													
Sample Size:		218													
Female	Percent of Sample	0.0	0.0	0.0	1.8	5.0	0.0	0.0	27.5	0.0	0.0	4.1	0.0	38.5	
	Number in Escapement	0	0	0	34	93	0	0	509	0	0	76	0	713	
Male	Percent of Sample	0.0	2.3	0.0	0.5	48.6	0.0	0.0	7.3	2.3	0.0	0.5	0.0	61.5	
	Number in Escapement	0	42	0	8	900	0	0	136	42	0	8	0	1,137	
Total	Percent of Sample	0.0	2.3	0.0	2.3	53.7	0.0	0.0	34.9	2.3	0.0	4.6	0.0	100.0	
	Number in Escapement	0	42	0	42	993	0	0	645	42	0	85	0	1,850	
	Standard Error	0	19	0	19	63	0	0	60	19	0	26	0		
Strata Combined: 06/08 -- 09/08															
Sampling Dates:		07/18 -- 06/07													
Sample Size:		434													
Female	Percent of Sample	0.0	0.6	0.0	4.6	4.2	0.0	0.0	27.9	0.2	0.0	3.5	0.0	41.0	
	Number in Escapement	0	22	0	156	144	0	0	947	7	0	119	0	1,395	
Male	Percent of Sample	0.0	5.9	0.0	1.1	40.6	0.0	0.0	8.4	2.1	0.0	0.9	0.0	59.0	
	Number in Escapement	0	200	0	37	1,380	0	0	286	71	0	30	0	2,005	
Total	Percent of Sample	0.0	6.5	0.0	5.7	44.8	0.0	0.0	36.3	2.3	0.0	4.4	0.0	100.0	
	Number in Escapement	0	222	0	193	1,524	0	0	1,233	78	0	149	0	3,400	
	Standard Error	0	39	0	37	80	0	0	79	25	0	34	0		

-Continued-

		Brood Year and Age Group												
		1988	1987		1986		1985			1984		1983		
		0.1	0.2	1.1	0.3	1.2	2.1	0.4	1.3	2.2	1.4	2.3	1.5	Total
Eyak Lake -- Middle Arm														
Stratum Dates: 05/20 - 07/14														
Sampling Dates: 06/18 - 06/25														
Sample Size: 108														
Female	Percent of Sample	0.0	0.9	0.0	9.3	9.3	0.0	0.0	40.7	0.0	2.8	4.6	0.0	67.6
	Number in Escapement	0	3	0	25	25	0	0	110	0	8	13	0	183
Male	Percent of Sample	0.0	0.9	1.9	2.8	7.4	0.0	0.0	18.5	0.0	0.9	0.0	0.0	32.4
	Number in Escapement	0	3	5	8	20	0	0	50	0	3	0	0	88
Total	Percent of Sample	0.0	1.9	1.9	12.0	16.7	0.0	0.0	59.3	0.0	3.7	4.6	0.0	100.0
	Number in Escapement	0	5	5	33	45	0	0	160	0	10	13	0	270
	Standard Error	0	4	4	8	10	0	0	13	0	5	5	0	
Stratum Dates: 07/14 - 08/16														
Sampling Date: 07/17														
Sample Size: 386														
Female	Percent of Sample	0.0	0.5	0.0	2.1	5.2	0.0	0.0	11.7	1.3	0.0	2.6	0.0	23.3
	Number in Escapement	0	5	0	21	52	0	0	117	13	0	26	0	233
Male	Percent of Sample	0.0	3.1	0.8	0.8	45.6	0.0	0.0	14.5	8.0	0.0	3.9	0.0	76.7
	Number in Escapement	0	31	8	8	456	0	0	145	80	0	39	0	767
Total	Percent of Sample	0.0	3.6	0.8	2.8	50.8	0.0	0.0	26.2	9.3	0.0	6.5	0.0	100.0
	Number in Escapement	0	36	8	28	508	0	0	262	93	0	65	0	1,000
	Standard Error	0	10	4	8	25	0	0	22	15	0	13	0	
Stratum Dates: 08/16 - 10/03														
Sampling Date: 08/27														
Sample Size: 337														
Female	Percent of Sample	0.0	0.6	0.0	2.7	5.6	0.0	0.0	22.0	0.0	0.0	0.3	0.0	31.2
	Number in Escapement	0	20	0	88	186	0	0	725	0	0	10	0	1,028
Male	Percent of Sample	0.0	0.9	0.0	8.3	11.6	0.0	0.0	46.6	0.6	0.0	0.9	0.0	68.8
	Number in Escapement	0	29	0	274	382	0	0	1,537	20	0	29	0	2,277
Total	Percent of Sample	0.0	1.5	0.0	11.0	17.2	0.0	0.0	68.5	0.6	0.0	1.2	0.0	100.0
	Number in Escapement	0	49	0	362	568	0	0	2,262	20	0	39	0	3,200
	Standard Error	0	22	0	56	68	0	0	84	14	0	19	0	
Strata Combined: 05/20 - 10/03														
Sampling Dates: 06/18 - 08/27														
Sample Size: 831														
Female	Percent of Sample	0.0	0.6	0.0	2.9	5.8	0.0	0.0	20.8	0.3	0.2	1.1	0.0	31.6
	Number in Escapement	0	27	0	134	263	0	0	951	13	8	48	0	1,444
Male	Percent of Sample	0.0	1.4	0.3	6.3	18.8	0.0	0.0	37.9	2.2	0.1	1.5	0.0	68.4
	Number in Escapement	0	63	13	289	858	0	0	1,732	100	3	68	0	3,126
Total	Percent of Sample	0.0	2.0	0.3	9.3	24.5	0.0	0.0	58.7	2.5	0.2	2.5	0.0	100.0
	Number in Escapement	0	90	13	423	1,121	0	0	2,684	113	10	116	0	4,570
	Standard Error	0	24	6	58	73	0	0	87	20	5	24	0	

-Continued-

		Brood Year and Age Group												Total	
		1988	1987		1986			1985			1984		1983		
		0.1	0.2	1.1	0.3	1.2	2.1	0.4	1.3	2.2	1.4	2.3	1.5		
Eyak Lake - Hatchery Creek															
Stratum Dates:		06/05 - 06/24													
Sampling Date:		06/25													
Sample Size:		20													
Female	Percent of Sample	0.0	0.0	0.0	5.0	25.0	0.0	0.0	20.0	0.0	0.0	5.0	0.0	55.0	
	Number in Escapement	0	0	0	20	100	0	0	80	0	0	20	0	220	
Male	Percent of Sample	0.0	0.0	0.0	0.0	15.0	0.0	0.0	20.0	5.0	0.0	5.0	0.0	45.0	
	Number in Escapement	0	0	0	0	60	0	0	80	20	0	20	0	180	
Total	Percent of Sample	0.0	0.0	0.0	5.0	40.0	0.0	0.0	40.0	5.0	0.0	10.0	0.0	100.0	
	Number in Escapement	0	0	0	20	160	0	0	160	20	0	40	0	400	
	Standard Error	0	0	0	20	45	0	0	45	20	0	28	0		
Eyak Lake Total															
Strata Combined:		05/20 - 10/03													
Sampling Dates:		06/18 - 08/27													
Sample Size:		1,285													
Female	Percent of Sample	0.0	0.6	0.0	3.7	6.1	0.0	0.0	23.6	0.2	0.1	2.2	0.0	36.5	
	Number in Escapement	0	49	0	310	506	0	0	1,978	20	8	188	0	3,058	
Male	Percent of Sample	0.0	3.1	0.2	3.9	27.5	0.0	0.0	25.1	2.3	0.0	1.4	0.0	63.5	
	Number in Escapement	0	263	13	327	2,298	0	0	2,099	191	3	118	0	5,312	
Total	Percent of Sample	0.0	3.7	0.2	7.6	33.5	0.0	0.0	48.7	2.5	0.1	3.7	0.0	100.0	
	Number in Escapement	0	312	13	636	2,805	0	0	4,077	211	10	306	0	8,370	
	Standard Error	0	46	6	71	118	0	0	126	38	5	50	0		

-Continued-

Appendix C.4. (Page 4 of 7).

		Brood Year and Age Group												Total	
		1988	1987		1986			1985			1984		1983		
		0.1	0.2	1.1	0.3	1.2	2.1	0.4	1.3	2.2	1.4	2.3	1.5		
McKinley Lake -- Salmon Creek delta															
Stratum Dates:		07/03 - 10/16													
Sampling Dates:		07/10 - 07/25													
Sample Size:		516													
Female	Percent of Sample	0.0	0.6	0.6	3.7	8.7	0.0	0.0	14.9	0.0	0.2	1.0	0.0	29.7	
	Number in Escapement	0	20	20	125	297	0	0	507	0	7	33	0	1,008	
Male	Percent of Sample	0.0	5.2	0.2	1.4	53.9	0.0	0.0	6.6	2.5	0.2	0.4	0.0	70.3	
	Number in Escapement	0	178	7	46	1,832	0	0	224	86	7	13	0	2,392	
Total	Percent of Sample	0.0	5.8	0.8	5.0	62.6	0.0	0.0	21.5	2.5	0.4	1.4	0.0	100.0	
	Number in Escapement	0	198	26	171	2,128	0	0	731	86	13	46	0	3,400	
	Standard Error	0	35	13	33	72	0	0	62	23	9	17	0		
27--Mile Slough -- Confluence with Copper River															
Stratum Dates:		06/22 - 09/25													
Sampling Date:		06/26													
Sample Size:		494													
Female	Percent of Sample	0.0	2.8	0.0	7.9	9.5	0.0	0.0	19.0	0.6	0.6	0.8	0.0	41.3	
	Number in Escapement	0	95	0	265	320	0	0	639	20	20	27	0	1,388	
Male	Percent of Sample	0.0	15.2	1.0	2.6	34.0	0.0	0.0	4.0	1.8	0.0	0.0	0.0	58.7	
	Number in Escapement	0	510	34	88	1,143	0	0	136	61	0	0	0	1,972	
Total	Percent of Sample	0.0	18.0	1.0	10.5	43.5	0.0	0.0	23.1	2.4	0.6	0.8	0.0	100.0	
	Number in Escapement	0	605	34	354	1,462	0	0	775	82	20	27	0	3,360	
	Standard Error	0	58	15	46	75	0	0	64	23	12	14	0		

-Continued-

Appendix C.4. (Page 5 of 7).

		Brood Year and Age Group												
		1988	1987		1986			1985			1984		1983	
		0.1	0.2	1.1	0.3	1.2	2.1	0.4	1.3	2.2	1.4	2.3	1.5	Total
<hr/>														
Thirty-Nine Mile Creek														
Stratum Dates:		07/03 - 08/01												
Sampling Date:		07/09												
Sample Size:		445												
Female	Percent of Sample		0.4	0.0	4.3	2.9	0.0	0.0	36.9	0.0	0.0	1.3	0.0	45.8
	Number in Escapement		8	0	73	50	0	0	627	0	0	23	0	779
Male	Percent of Sample		2.2	0.0	2.9	16.6	0.0	0.0	27.0	2.9	0.0	2.2	0.0	53.9
	Number in Escapement		38	0	50	283	0	0	458	50	0	38	0	917
Total	Percent of Sample		2.7	0.0	7.4	19.6	0.0	0.0	63.8	2.9	0.0	3.6	0.0	100.0
	Number in Escapement		46	0	126	332	0	0	1,085	50	0	61	0	1,700
	Standard Error		13	0	21	32	0	0	39	14	0	15	0	
<hr/>														
Stratum Dates:		08/01 - 10/30												
Sampling Date:		08/28												
Sample Size:		236												
Female	Percent of Sample		0.4	0.0	4.7	6.4	0.0	0.0	27.5	0.4	0.0	0.8	0.0	40.3
	Number in Escapement		14	0	154	210	0	0	909	14	0	28	0	1,328
Male	Percent of Sample		2.5	2.5	3.8	28.0	0.0	0.0	22.0	0.0	0.0	0.8	0.0	59.7
	Number in Escapement		84	84	126	923	0	0	727	0	0	28	0	1,972
Total	Percent of Sample		3.0	2.5	8.5	34.3	0.0	0.0	49.6	0.4	0.0	1.7	0.0	100.0
	Number in Escapement		98	84	280	1,133	0	0	1,636	14	0	56	0	3,300
	Standard Error		37	34	60	102	0	0	108	14	0	28	0	
<hr/>														
Strata Combined:		07/03 - 10/30												
Sampling Date:		07/09 - 08/28												
Sample Size:		681												
Female	Percent of Sample		0.4	0.0	4.5	5.2	0.0	0.0	30.7	0.3	0.0	1.0	0.0	42.2
	Number in Escapement		22	0	226	259	0	0	1,535	14	0	51	0	2,108
Male	Percent of Sample		2.4	1.7	3.5	24.1	0.0	0.0	23.7	1.0	0.0	1.3	0.0	57.8
	Number in Escapement		122	84	176	1,206	0	0	1,186	50	0	66	0	2,888
Total	Percent of Sample		2.9	1.7	8.1	29.3	0.0	0.0	54.4	1.3	0.0	2.3	0.0	100.0
	Number in Escapement		144	84	406	1,465	0	0	2,721	64	0	117	0	5,000
	Standard Error		39	34	64	107	0	0	114	19	0	32	0	

- Continued -

Appendix C.4. (Page 6 of 7).

		Brood Year and Age Group												
		1988	1987		1986			1985			1984		1983	
		0.1	0.2	1.1	0.3	1.2	2.1	0.4	1.3	2.2	1.4	2.3	1.5	Total
Pleasant Creek — Confluence with Martin River														
Stratum Dates:		06/22 — 07/19												
Sampling Date:		07/02 — 07/03												
Sample Size:		435												
Female	Percent of Sample	0.0	0.7	0.0	14.9	12.9	0.0	0.2	29.9	0.2	0.5	0.0	0.2	59.5
	Number in Escapement	0	22	0	477	411	0	7	953	7	15	0	7	1,899
Male	Percent of Sample	0.0	6.2	0.2	5.7	14.7	0.2	0.0	12.4	0.7	0.0	0.2	0.0	40.5
	Number in Escapement	0	198	7	183	469	7	0	396	22	0	7	0	1,291
Total	Percent of Sample	0.0	6.9	0.2	20.7	27.6	0.2	0.2	42.3	0.9	0.5	0.2	0.2	100.0
	Number in Escapement	0	220	7	660	880	7	7	1,349	29	15	7	7	3,190
	Standard Error	0	39	7	62	68	7	7	76	15	10	7	7	
Ragged Point River — Confluence with Martin River														
Stratum Dates:		07/03 — 10/30												
Sampling Date:		07/17												
Sample Size:		687												
Female	Percent of Sample	0.0	1.5	0.0	6.6	13.7	0.0	0.0	23.6	2.6	0.3	3.1	0.0	51.2
	Number in Escapement	0	130	0	586	1,225	0	0	2,110	234	26	274	0	4,586
Male	Percent of Sample	0.0	3.9	0.4	4.2	21.0	0.0	0.0	14.0	3.1	0.0	2.2	0.0	48.8
	Number in Escapement	0	352	39	378	1,876	0	0	1,251	274	0	195	0	4,364
Total	Percent of Sample	0.0	5.4	0.4	10.8	34.6	0.0	0.0	37.6	5.7	0.3	5.2	0.0	100.0
	Number in Escapement	0	482	39	964	3,101	0	0	3,361	508	26	469	0	8,950
	Standard Error	0	77	23	106	163	0	0	165	79	18	76	0	
Martin Lake — West shore and outlet														
Stratum Dates:		06/12 — 10/30												
Sampling Dates:		07/16 & 07/18												
Sample Size:		617												
Female	Percent of Sample	0.0	1.0	0.0	2.8	16.2	0.0	0.0	17.5	2.4	0.0	1.3	0.0	41.2
	Number in Escapement	0	131	0	370	2,178	0	0	2,353	327	0	174	0	5,533
Male	Percent of Sample	0.8	5.7	6.5	1.6	34.7	0.0	0.0	3.2	5.8	0.0	0.5	0.0	58.8
	Number in Escapement	109	762	871	218	4,662	0	0	436	784	0	65	0	7,907
Total	Percent of Sample	0.8	6.6	6.5	4.4	50.9	0.0	0.0	20.7	8.3	0.0	1.8	0.0	100.0
	Number in Escapement	109	893	871	588	6,840	0	0	2,788	1,111	0	240	0	13,440
	Standard Error	49	135	133	111	271	0	0	220	149	0	72	0	
Little Martin Lake														
Stratum Dates:		06/22 — 10/16												
Sampling Dates:		07/20 — 07/22												
Sample Size:		488												
Female	Percent of Sample	0.0	0.2	0.0	1.2	10.2	0.0	0.0	14.1	0.0	0.0	0.0	0.0	25.8
	Number in Escapement	0	12	0	70	584	0	0	806	0	0	0	0	1,472
Male	Percent of Sample	0.4	1.2	4.1	0.6	43.9	0.0	0.0	23.8	0.2	0.0	0.0	0.0	74.2
	Number in Escapement	23	70	234	35	2,500	0	0	1,355	12	0	0	0	4,228
Total	Percent of Sample	0.4	1.4	4.1	1.8	54.1	0.0	0.0	37.9	0.2	0.0	0.0	0.0	100.0
	Number in Escapement	23	82	234	105	3,084	0	0	2,161	12	0	0	0	5,700
	Standard Error	17	31	51	35	129	0	0	125	12	0	0	0	

-Continued-

		Brood Year and Age Group												Total		
		1988		1987		1986			1985			1984			1983	
		0.1	0.2	1.1	0.3	1.2	2.1	0.4	1.3	2.2	1.4	2.3	1.5			
Tokun Lake																
Stratum Dates:		06/12 - 10/30														
Sampling Dates:		07/22 - 07/23														
Sample Size:		481														
Female	Percent of Sample	0.0	0.8	0.0	6.2	9.6	0.0	0.0	30.8	0.6	0.6	0.0	0.0	48.6		
	Number in Escapement	0	35	0	262	402	0	0	1,292	26	26	0	0	2,043		
Male	Percent of Sample	0.0	0.6	0.2	5.8	19.8	0.0	0.2	23.3	0.4	0.8	0.2	0.0	51.4		
	Number in Escapement	0	26	9	244	830	0	9	978	17	35	9	0	2,157		
Total	Percent of Sample	0.0	1.5	0.2	12.1	29.3	0.0	0.2	54.1	1.0	1.5	0.2	0.0	100.0		
	Number in Escapement	0	61	9	506	1,231	0	9	2,270	44	61	9	0	4,200		
	Standard Error	0	23	9	62	87	0	9	96	19	23	9	0			
Martin River Slough																
Stratum Dates:		06/12 - 08/29														
Sampling Dates:		06/21 - 06/22														
Sample Size:		540														
Female	Percent of Sample	0.0	9.3	0.2	4.4	16.9	0.0	0.0	13.1	0.2	0.0	0.7	0.0	44.8		
	Number in Escapement	0	1,287	26	618	2,342	0	0	1,828	26	0	103	0	6,229		
Male	Percent of Sample	0.7	12.6	3.1	3.7	22.2	0.6	0.0	11.5	0.6	0.0	0.2	0.0	55.2		
	Number in Escapement	103	1,750	438	515	3,089	77	0	1,596	77	0	26	0	7,671		
Total	Percent of Sample	0.7	21.9	3.3	8.1	39.1	0.6	0.0	24.6	0.7	0.0	0.9	0.0	100.0		
	Number in Escapement	103	3,037	463	1,133	5,431	77	0	3,424	103	0	129	0	13,900		
	Standard Error	51	247	107	164	292	45	0	258	51	0	57	0			
Copper River delta Escapements																
Strata Combined:		05/20 - 10/30														
Sampling Dates:		06/18 - 08/28														
Sample Size:		6,224														
Female	Percent of Sample	0.0	2.6	0.1	4.8	12.3	0.0	0.0	20.1	1.0	0.1	1.2	0.0	42.2		
	Number in Escapement	0	1,802	46	3,310	8,524	0	7	14,002	675	101	849	7	29,324		
Male	Percent of Sample	0.3	6.1	2.5	3.2	28.6	0.1	0.0	13.9	2.3	0.1	0.7	0.0	57.8		
	Number in Escapement	235	4,232	1,735	2,210	19,903	85	9	9,656	1,574	44	500	0	40,182		
Total	Percent of Sample	0.3	8.7	2.6	7.9	40.9	0.1	0.0	34.0	3.2	0.2	1.9	0.0	100.0		
	Number in Escapement	235	6,034	1,780	5,524	28,427	85	16	23,658	2,249	145	1,350	7	69,510		
	Standard Error	73	311	185	268	500	45	11	458	186	35	135	7			

Appendix C.5. Estimated age and sex composition of the sockeye salmon escapements to the Bering River drainage, 1990.

		Brood Year and Age Group												
		1988	1987		1986		1985			1984		1983		
		0.1	0.2	1.1	0.3	1.2	0.4	1.3	2.2	1.4	2.3	1.5	Total	
Bering Lake -- Vicinity of Dick Creek														
Stratum Dates:		06/12 -		09/08										
Sampling Dates:		07/10 -		07/12										
Sample Size:		566												
Female	Percent of Sample	0.0	0.9	0.0	9.2	12.5	0.0	17.7	0.0	0.0	0.0	0.0	40.3	
	Number in Escapement	0	144	0	1,500	2,048	0	2,884	0	0	0	0	6,576	
Male	Percent of Sample	0.2	2.7	0.9	4.2	28.6	0.0	23.0	0.0	0.0	0.0	0.0	59.5	
	Number in Escapement	29	433	144	692	4,673	0	3,750	0	0	0	0	9,720	
Total	Percent of Sample	0.2	3.5	0.9	13.4	41.3	0.0	40.6	0.0	0.0	0.0	0.0	100.0	
	Number in Escapement	29	577	144	2,192	6,749	0	6,634	0	0	0	0	16,325	
	Standard Error	29	127	64	234	338	0	337	0	0	0	0		
Clear Creek (Kushtaka Lake drainage)														
Stratum Dates:		07/19 -		08/24										
Sampling Dates:		08/13 -		08/13										
Sample Size:		75												
Female	Percent of Sample	0.0	0.0	0.0	2.7	6.7	0.0	37.3	0.0	0.0	8.0	0.0	54.7	
	Number in Escapement	0	0	0	19	47	0	261	0	0	56	0	383	
Male	Percent of Sample	0.0	1.3	0.0	0.0	9.3	0.0	29.3	0.0	0.0	5.3	0.0	45.3	
	Number in Escapement	0	9	0	0	65	0	205	0	0	37	0	317	
Total	Percent of Sample	0.0	1.3	0.0	2.7	16.0	0.0	66.7	0.0	0.0	13.3	0.0	100.0	
	Number in Escapement	0	9	0	19	112	0	467	0	0	93	0	700	
	Standard Error	0	9	0	13	30	0	38	0	0	28	0		
Kushtaka Lake														
Stratum Dates:		07/19 -		08/29										
Sampling Dates:		08/07 -		08/07										
Sample Size:		385												
Female	Percent of Sample	0.0	0.5	0.0	1.6	23.4	0.0	19.7	0.5	1.6	0.0	0.0	47.3	
	Number in Escapement	0	2	0	6	90	0	76	2	6	0	0	182	
Male	Percent of Sample	0.0	1.8	0.0	0.0	39.0	0.3	10.6	0.8	0.0	0.3	0.0	52.7	
	Number in Escapement	0	7	0	0	150	1	41	3	0	1	0	203	
Total	Percent of Sample	0.0	2.3	0.0	1.6	62.3	0.3	30.4	1.3	1.6	0.3	0.0	100.0	
	Number in Escapement	0	9	0	6	240	1	117	5	6	1	0	385	
	Standard Error	0	3	0	2	10	1	9	2	2	1	0		
Bering River Combined Samples														
Samples Combined:		06/12 -		09/08										
Sampling Dates:		07/10 -		08/07										
Sample Size:		1,026												
Female	Percent of Sample	0.0	0.8	0.0	8.8	12.5	0.0	18.5	0.0	0.0	0.3	0.0	41.0	
	Number in Escapement	0	146	0	1,524	2,185	0	3,222	2	6	56	0	7,141	
Male	Percent of Sample	0.2	2.6	0.8	4.0	28.1	0.0	23.0	0.0	0.0	0.2	0.0	58.8	
	Number in Escapement	29	449	144	692	4,888	1	3,996	3	0	38	0	10,240	
Total	Percent of Sample	0.2	3.4	0.8	12.7	40.8	0.0	41.5	0.0	0.0	0.5	0.0	100.0	
	Number in Escapement	29	595	144	2,217	7,101	1	7,218	5	6	94	0	17,410	
	Standard Error	29	127	64	235	340	1	340	2	2	28	0		

APPENDIX D: SALMON ESCAPEMENTS TO THE UPPER COPPER RIVER

Appendix D.1. Daily Copper River escapement estimates at the Miles Lake sonar site, 1990.

Date	North Bank	South Bank	Daily Counts ^a	Cumulative
21-May		1,121	1,121	1,121
22-May	809	4,034	4,843	5,964
23-May	1,050	6,127	7,177	13,141
24-May	773	11,150	11,923	25,064
25-May	524	13,809	14,333	39,397
26-May	1,630	9,707	11,337	50,734
27-May	1,378	10,682	12,060	62,794
28-May	1,325	6,109	7,434	70,228
29-May	1,250	7,926	9,176	79,404
30-May	1,184	8,357	9,541	88,945
31-May	1,324	9,019	10,343	99,288
01-Jun	406	9,620	10,026	109,314
02-Jun	436	9,473	9,909	119,223
03-Jun	383	8,193	8,576	127,799
04-Jun	685	6,887	7,572	135,371
05-Jun	1,086	9,087	10,173	145,544
06-Jun	907	9,503	10,410	155,954
07-Jun	1,336	9,801	11,137	167,091
08-Jun	1,076	6,561	7,637	174,728
09-Jun	1,350	8,555	9,905	184,633
10-Jun	916	10,744	11,660	196,293
11-Jun	1,242	14,939	16,181	212,474
12-Jun	1,839	22,090	23,929	236,403
13-Jun	1,533	22,915	24,448	260,851
14-Jun	751	13,551	14,302	275,153
15-Jun	593	7,797	8,390	283,543
16-Jun	1,129	8,983	10,112	293,655
17-Jun	655	12,040	12,695	306,350
18-Jun	695	7,357	8,052	314,402
19-Jun	994	8,769	9,763	324,165
20-Jun	1,232	8,083	9,315	333,480
21-Jun	971	9,321	10,292	343,772
22-Jun	602	9,555	10,157	353,929
23-Jun	648	9,518	10,166	364,095
24-Jun	438	8,902	9,340	373,435
25-Jun	282	9,728	10,010	383,445
26-Jun	486	6,326	6,812	390,257
27-Jun	492	8,742	9,234	399,491
28-Jun	528	6,353	6,881	406,372
29-Jun	475	4,024	4,499	410,871
30-Jun	401	3,574	3,975	414,846

-Continued-

Appendix D.1. (Pg. 2 of 2)

Date	North Bank	South Bank	Daily Counts	Cumulative
01-Jul	365	3,958	4,323	419,169
02-Jul	244	4,823	5,067	424,236
03-Jul	240	4,442	4,682	428,918
04-Jul	286	5,379	5,665	434,583
05-Jul	450	7,548	7,998	442,581
06-Jul	435	7,314	7,749	450,330
07-Jul	322	5,378	5,700	456,030
08-Jul	312	4,880	5,192	461,222
09-Jul	307	4,846	5,153	466,375
10-Jul	272	6,348	6,620	472,995
11-Jul	648	4,754	5,402	478,397
12-Jul	520	8,818	9,338	487,735
13-Jul	878	10,554	11,432	499,167
14-Jul	553	7,653	8,206	507,373
15-Jul	323	7,986	8,309	515,682
16-Jul	1,066	5,027	6,093	521,775
17-Jul	575	5,684	6,259	528,034
18-Jul	585	5,141	5,726	533,760
19-Jul	609	5,366	5,975	539,735
20-Jul	374	3,941	4,315	544,050
21-Jul	236	2,298	2,534	546,584
22-Jul	106	2,351	2,457	549,041
23-Jul	328	3,573	3,901	552,942
24-Jul	300	2,583	2,883	555,825
25-Jul	293	1,757	2,050	557,875
26-Jul	132	2,125	2,257	560,132
27-Jul	384	2,501	2,885	563,017
28-Jul		1,934	1,934	564,951
29-Jul		2,808	2,808	567,759
30-Jul		2,462	2,462	570,221
31-Jul		2,550	2,550	572,771
01-Aug		3,839	3,839	576,610
02-Aug		5,249	5,249	581,859
Total	46,957	534,902		581,859

^a Species composition is not estimated for sonar counts, but upriver aerial surveys indicate that the majority of the fish are sockeye salmon.

Appendix D.2. Sockeye salmon escapement through the Long Lake weir, 1990.

Escapement ^a			Escapement ^a		
Date	Daily	Cumulative	Date	Daily	Cumulative
07/25	0	0	08/26	0	2,354
07/26	0	0	08/27	202	2,556
07/27	0	0	08/28	886	3,442
07/28	0	0	08/29	1,061	4,503
07/29	0	0	08/30	402	4,905
07/30	0	0	08/31	114	5,019
07/31	0	0	09/01	388	5,407
08/01	0	0	09/02	1,150	6,557
08/02	0	0	09/03	337	6,894
08/03	0	0	09/04	4,209	11,103
08/04	0	0	09/05	790	11,893
08/05	0	0	09/06	907	12,800
08/06	12	12	09/07	490	13,290
08/07	499	511	09/08	562	13,852
08/08	369	880	09/09	1,304	15,156
08/09	0	880	09/10	1,074	16,230
08/10	62	942	09/11	557	16,787
08/11	135	1,077	09/12	535	17,322
08/12	0	1,077	09/13	523	17,845
08/13	0	1,077	09/14	362	18,207
08/14	39	1,116	09/15	383	18,590
08/15	0	1,116	09/16	236	18,826
08/16	0	1,116	09/17	900	19,726
08/17	103	1,219	09/18	27	19,753
08/18	187	1,406	09/19	273	20,026
08/19	376	1,782	09/20	502	20,528
08/20	0	1,782	09/21	345	20,873
08/21	0	1,782	09/22	276	21,149
08/22	0	1,782	09/23	175	21,324
08/23	124	1,906	09/24	170	21,494
08/24	29	1,935	09/25	145	21,639
08/25	419	2,354	09/26	25	21,664
				Total	21,664

^a Data collection by Cliff Collins and family of Long Lake, Alaska.

Appendix D.3. Aerial escapement estimates of sockeye salmon returning to the upper Copper River drainage by date and location, 1990.

Location	Survey Week Ending Date												Peak Count	
	6/30	7/07	7/14	7/21	7/28	8/04	8/18	8/25	9/08	9/22	10/6	10/27	Site	System
Bremner River														
Peninsula Lake					15					600			600	1,200
Little Bremner River														
Steamboat Lake					40					250			250	
Eagle Creek														
Salmon Creek *					350					100			350	
Price Creek														
Unnamed Creek #1														
Unnamed Creek #2														
Tasnauna River														
Whiting Falls Creek														
Unnamed Tributary														
Tiekel Lake					10								10	10
Swan Lakes														
Lake #1														
Lake #2														
Lake #3														
Lake #4														
Tonsina River *														1,450
Lower Tonsina Creek														
Little Tonsina River *						0								
Fourth of July Creek														
Tonsina Lake *										125			1,450	
Bernard Creek						0								
Greyling Creek *						0								
Dust Creek						0								
Unnamed Creek														
Klutina River *														5,515
Manker Creek *	0	0				0								
Mahlo Creek *	50	400			2,600	1,950							2,600	
Island Lake					25					1,100			1,100	
1884 Lake					0					5			5	
Hallet Slough Beach *					110					27			110	
Curtis Creek														
St. Anne Creek *	300	325			1,700	1,650							1,700	
Klutina Inlet														

-Continued-

Location	Survey Week Ending Date												Peak Count	
	6/30	7/07	7/14	7/21	7/28	8/04	8/18	8/25	9/08	9/22	10/6	10/27	Site	System
Tazlina River														4,910
Upper Mendeltna Creek	375	610					100						1,000	
Mendeltna Creek ^{*,*}	0	0			450	450	3,700		2,200				3,700	
Kiana Creek [*]	200	200			15	200	0						200	
Upper Kiana Lake					10		0						10	
Tazlina Lake [*]					0								0	
Gulkana River														7,243
Mouth to West Fork						1,145	750						1,325	
Mouth--Bridge	0	25		300										
Bridge--Sourdough		350		200										
Sourdough--W.Fork	390	950		60										
West Fork [*]		35		885									885	
Dog Creek														
Crosswind Lake														
Moose Cr -- Monsoon L.					10									
Moose Creek					0									
Moose Cr -- Keg Cr														
Keg Creek [*]				40	160	37							160	
Keg Cr. Mouth					700	750							750	
Victor Creek			15	2,200	1,225								2,200	
West Fork to Middle Fk. [*]	875	1,375		1,100		700	1,050						1,375	
W. Fork -- Falls														
Falls -- M. Fork														
Middle Fork [*]				300									400	
Dickey Lake ^{*,*}				1	0	28		5					28	
Dickey L -- Swede Cr					0									
Swede Lake [*]					30			120					120	
Swede Cr -- E. Fork					400									
Hungry Hollow Creek [*]					0									
East Fork														20,705
East Fork to Paxson Lk. ^{*,*}				0	10	200		1,350	150				1,350	
Paxson Lake								0					0	
Paxson Lake Inlet				100	1,150	3,500		2,100	1,900	0	1,000		2,600	
Inlet to Mud Creek [*]				400	1,550	4,300		1,450	275	0	600		2,850	
Mud Creek and Lake [*]				0	0			25					35	
Mud Creek to Summit Lk. [*]				50	476	460		850	2,950	2,050	1,250		2,950	
Fish Lake ^{*,*}				300	0			925		3,600			3,600	
Summit Lake				0	0	20		7		675	50		675	
Gunn Creek				235	450	470		10	1,250	6,100	4,300		6,100	
Gunn Lake Creek				120	275	545		250	10	0	20		545	
Gakona River														
Headwater Spring						35							35	90
Unnamed Cr.				25									25	
Spring Creek														
Alder Creek					30								30	
Drop Creek														
Tributary by Boulder Creek				0										
Sinona Creek	0			0										
Bear Creek				0										

-Continued-

Location	Survey Week Ending Date												Peak Count	
	6/30	7/07	7/14	7/21	7/28	8/04	8/18	8/25	9/08	9/22	10/6	10/27	Site	System
Chistochina River														150
East Fork *				0	40								40	
Eagle Creek				90	110								110	
Mankomen Lake														
Slana River ^b														14,000
Mentasta Lake *				2,900	950		1,450			1,450			2,900	
Fish Creek *				1,000	800		150			150			1,000	
Bad Crossing #1 ^{a,d}				1,100	470		0			0			1,100	
Bad Crossing #2 ^{a,d}				4,600	3,800		0			0			4,600	
Granite Creek				50	25								50	
Bone Creek				3,150	1,775								3,150	
Slana Sloughs				350	150		0			0			350	
Suslositna Lake				0	100		50			50			100	
Suslota Lake ^{a,d}				600	0		450	650					650	
Smith Creek				100									100	
Natat Creek				0									0	
Indian River *	0			0										
Ahtell Creek				0										
Tanada Creek	0			150										3,000
Tanada Lake *							250	1,200	1,650				1,650	
Tanada Lake Outlet							750	0	1,350				1,350	
Copper Creek									75	5			75	750
Copper Lake ^d							320	675	267				675	
Tebay River														
Chokosna River														
Lakina River														1,950
Long Lake *										1,950			1,950	
Nizina River														
Spruce Point Creek														
Trumpeter Lake														
Lake Creek														
Clear Creek (Chitina R.)														
Tana River ^b														89
Tana R. Clear Channels *										75			75	
Tana Lake Inlet ^{a,b}										5			5	
West Fork Channels *										9			9	
Chakina River														
Monahan Creek														
Combined Systems Total *														61,062

* Sockeye salmon index streams.

^b Glacial system.^c Chinook salmon index stream.^d Count includes numbers of both live and dead fish.^e Some peak count totals may include the same group of fish counted during migration as well as on the spawning grounds.

Appendix D.4. Aerial escapement estimates of chinook salmon returning to the upper Copper River drainage by date and location, 1990.

Location	Survey Week Ending Date							Peak Count	
	6/30	7/07	7/14	7/21	7/28	8/04	8/11	Site	System
Tonsina River ^b									116
Lower Tonsina Creek									
Little Tonsina River ^c					57	28		57	
Fourth of July Creek									
Tonsina Lake ^a									
Bernard Creek						8		8	
Greyling Creek ^c					46	49		49	
Dust Creek						2		2	
Unnamed Creek									
Klutina River ^b									84
Manker Creek ^c	0	0			41	20		41	
Mahlo Creek ^a	0	0			1	0		1	
Island Lake									
1884 Lake									
Hallet Slough Beach ^{b, d}									
Curtis Creek									
St. Anne Creek ^{a, c}	0	0			25	42		42	
Klutina Inlet									
Tazlina River									731
Upper Mendeltna Creek									
Mendeltna Creek ^{a, c}	45	175			7	320	148	320	
Kiana Creek ^c	250	45			360	411	45	411	
Upper Kiana Lake									
Tazlina Lake ^d									
Gulkana River									2,476
Mouth to West Fork						1,215	503	1,215	
Mouth-Bridge	95	244	222	388					
Bridge-Sourdough	120	709	90	545					
Sourdough-W.Fork	128	196	37	455					
West Fork ^a				186				186	
Dog Creek									
Crosswind Lake									
Moose Cr - Monsoon L					5				
Moose Creek					0				
Moose Cr - Keg Cr									
Keg Creek ^a				0					
Keg Cr. Mouth					2				
Victor Creek				0	0				
West Fork to Middle Fk. ^a	90	222	241	530		970	121	970	
W. Fork - Falls									
Falls - M. Fork									
Middle Fork ^a				105				105	
Dickey Lake ^{a, d}				0	0				
Dickey L - Swede Cr					40	29			
Swede Lake ^a					0				
Swede Cr - E. Fork					39	57			
Hungry Hollow Creek ^a					9				

-Continued-

Location	Survey Week Ending Date							Peak Count	
	6/30	7/07	7/14	7/21	7/28	8/04	8/11	Site	System
East Fork									95
East Fork to Paxson Lk. ^{a,c}				17	21	95		95	
Paxson Lake				0					
Paxson Lake Inlet				0	0				
Inlet to Mud Creek ^a				0	0				
Mud Creek and Lake ^a				0	0				
Mud Creek to Summit Lk. ^a				0	0				
Fish Lake ^{a,d}				0	0				
Summit Lake				0	0				
Gunn Creek				0	0				
Gunn Lake Creek				0	0				
Gakona River									24
Headwater Spring									
Unnamed Cr.									
Spring Creek						24		24	
Alder Creek					0				
Drop Creek									
Tributary by Boulder Creek				19				19	19
Sinona Creek	1			0				1	1
Bear Creek				0					
Chistochina River									615
East Fork ^a				615	179			615	
Eagle Creek				18	23				
Mankomen Lake									
Slana River ^b									30
Mentasta Lake ^a				0	0				
Fish Creek ^a				0	0				
Bad Crossing #1 ^{a,d}				0	0				
Bad Crossing #2 ^{a,d}				0	0				
Granite Creek				0	0				
Bone Creek				30	15			30	
Slana Sloughs				0	0				
Suslositna Lake (New)				0	0				
Suslota Lake ^{a,d}				0	0				
Smith Creek				0					
Natat Creek				0				0	0
Indian River ^a	15			12				15	15
Ahtell Creek				2				2	2
Tanada Creek	0			0	0				
Tanada Lake ^a									
Tanada Lake Outlet									
Combined Systems Total ^a									4,208

^a Sockeye salmon index stream.^b Glacial system.^c Chinook salmon index stream.^d Count includes numbers of both live and dead fish.^e Some peak count totals may include the same group of fish counted during migration as well as on the spawning grounds.

Appendix D.5 Temporally stratified age and sex composition of sockeye salmon in the upper Copper River escapement past the Miles Lake Sonar facility estimated from fish sampled in the personal use and subsistence fisheries near Chitna, 1990.

		Brood Year and Age Group												
		1987		1986		1985			1984			1983		
		0.2	1.1	0.3	1.2	2.1	1.3	2.2	1.4	2.3	3.2	2.4	3.3	Total
Stratum Dates: 05/21 - 06/30 ^a														
Sampling Dates: 05/28 - 07/08 ^b														
Sample Size: 1,154														
Female	Percent of Sample	0.4	0.0	6.1	6.0	0.0	9.7	3.2	0.1	6.3	0.0	0.0	0.3	32.1
	Number in Escapement	1,797	0	25,164	24,804	0	40,262	13,301	359	26,242	0	0	1,078	133,010
Male	Percent of Sample	1.0	0.1	6.8	4.2	0.0	9.7	1.6	0.0	5.5	0.0	0.2	0.1	29.1
	Number in Escapement	3,954	359	28,040	17,615	0	40,262	6,830	0	22,648	0	719	359	120,787
Total	Percent of Sample ^c	2.3	0.1	19.3	15.9	0.0	32.9	7.5	0.4	21.0	0.0	0.3	0.3	100.0
	Number in Escapement	9,347	359	80,165	65,786	0	136,604	31,275	1,797	86,995	0	1,078	1,438	414,846
Standard Error		1,813	359	4,824	4,463	0	5,742	3,226	802	4,974	0	622	718	
Stratum Dates: 07/01 - 08/02														
Sampling Dates: 07/13 - 08/12														
Sample Size: 1,331														
Female	Percent of Sample	1.1	0.5	1.4	20.4	0.2	23.2	6	0.2	3.1	0.1	0.0	0.0	37.3
	Number in Escapement	1,882	878	2,259	34,130	251	38,773	6,023	376	5,145	125	0	0	89,843
Male	Percent of Sample	0.9	0.6	0.8	16.6	0.2	17.4	2.0	0.0	2.2	0.0	0.1	0.0	40.7
	Number in Escapement	1,506	1,004	1,380	27,731	376	28,986	3,262	0	3,639	0	125	0	68,010
Total	Percent of Sample ^c	2.3	1.2	2.6	38.5	0.4	43.1	5.9	0.2	5.6	0.1	0.1	0.0	100.0
	Number in Escapement	3,890	2,008	4,266	64,245	627	72,025	9,913	376	9,411	125	125	0	167,013
Standard Error		691	499	723	2,228	280	2,268	1,082	217	1,056	125	125	0	
Strata Combined: 05/21 - 08/02														
Sampling Dates: 05/28 - 08/12														
Sample Size: 2,485														
Female	Percent of Sample	0.6	0.2	4.7	10.1	0.0	13.6	3.3	0.1	5.4	0.0	0.0	0.2	38.3
	Number in Escapement	3,680	878	27,423	58,935	251	79,035	19,324	736	31,387	125	0	1,078	222,853
Male	Percent of Sample	0.9	0.2	5.1	7.8	0.1	11.9	1.7	0.0	4.5	0.0	0.1	0.1	32.4
	Number in Escapement	5,460	1,363	29,420	45,346	376	69,248	10,093	0	26,286	0	844	359	188,797
Total	Percent of Sample ^c	2.3	0.4	14.5	22.3	0.1	35.9	7.1	0.4	16.6	0.0	0.2	0.2	100.0
	Number in Escapement	13,236	2,367	84,432	130,031	627	208,630	41,188	2,174	96,406	125	1,204	1,438	581,859
Standard Error		1,940	615	4,878	4,988	280	6,173	3,402	831	5,084	125	635	718	

^a Dates of passage at Miles Lake estimated from mean travel rates obtained in Mark/recapture studies by Merritt and Robertson (1963).

^b Dates fish were sampled in the personal use and subsistence fisheries.

^c The total percent of sample may not sum to 100% because the total summary includes unsexed fish.

Appendix D.6 Estimated age and sex composition of chinook salmon carcasses sampled at five upper Copper River locations, 1990.

		Brood Year and Age Group				
		1986	1985	1984	1983	
		1.2	1.3	1.4	1.5	Total
Gulkana River						
Sampling Dates: 08/24–08/29						
Sample Size: 119						
Female	Number of Samples	1	46	10	0	57
	Percent of Sample	0.8	38.7	8.4	0.0	47.9
Male	Number of Samples	1	41	17	1	60
	Percent of Sample	0.8	34.5	14.3	0.8	50.4
Total	Number of Samples	2	89	27	1	119
	Percent of Sample	1.7	74.8	22.7	0.8	100.0
	Standard Error	1.2	4.00	3.9	0.8	
Little Tonsina River						
Sampling Dates: 08/09–08/10						
Sample Size: 32						
Female	Number of Samples	0	5	12	0	17
	Percent of Sample	0.0	15.6	37.5	0.0	53.1
Male	Number of Samples	0	4	11	0	15
	Percent of Sample	0.0	12.5	34.4	0.0	46.9
Total	Number of Samples	0	9	23	0	32
	Percent of Sample	0.0	28.1	71.9	0.0	100.0
	Standard Error	0.0	8.0	8.0	0.0	
East Fork Christochina River						
Sampling Dates: 08/01–08/03						
Sample Size: 30						
Female	Number of Samples	0	8	12	0	20
	Percent of Sample	0.0	26.7	40.0	0.0	66.7
Male	Number of Samples	0	4	6	0	10
	Percent of Sample	0.0	13.3	20.0	0.0	33.3
Total	Number of Samples	0	12	18	0	30
	Percent of Sample	0.0	40.0	60.0	0.0	100.0
	Standard Error	0.0	9.1	9.1	0.0	

–Continued–

		Brood Year and Age Group				
		1986	1985	1984	1983	
		1.2	1.3	1.4	1.5	Total
Kaina Creek						
Sampling Dates: 08/14-08/16						
Sample Size: 42						
Female	Number of Samples	0	4	15	0	19
	Percent of Sample	0.0	9.5	35.7	0.0	45.2
Male	Number of Samples	0	9	14	0	23
	Percent of Sample	0.0	21.4	33.3	0.0	54.8
Total	Number of Samples	0	13	29	0	42
	Percent of Sample	0.0	31.0	69.0	0.0	100.0
	Standard Error	0.0	7.2	7.2	0.0	
Mendeltna Creek						
Sampling Dates: 08/21						
Sample Size: 2						
Female	Number of Samples	0	2	0	0	2
	Percent of Sample	0.0	100.0	0.0	0.0	100.0
Male	Number of Samples	0	0	0	0	
	Percent of Sample	0.0	0.0	0.0	0.0	
Total	Number of Samples	0	2	0	0	2
	Percent of Sample	0.0	100.0	0.0	0.0	100.0
	Standard Error	0.0	0.0	0.0	0.0	

**APPENDIX E: AGE AND SEX DATA FOR COMMERCIAL COMMON PROPERTY SALMON
CATCHES FROM PRINCE WILLIAM SOUND (DISTRICTS 221-229)**

**Appendix E.1. Estimated age and sex composition of sockeye salmon harvested in the Eshamy District
commercial common property drift and set gillnet fisheries, 1990.**

		Brood Year and Age Group						Total
		1987		1986	1985		1984	
		0.2	1.1	1.2	1.3	2.2	2.3	
Stratum Dates: 06/11 - 08/28								
Sampling Dates: 06/28 - 08/01								
Sample Size: 278								
Female	Percent of Sample	0.4	0.4	45.7	18.3	0.7	1.1	66.5
	Number in Catch	83	83	10,585	4,251	167	250	15,420
Male	Percent of Sample	0.4	0.0	24.5	8.6	0.0	0.0	33.5
	Number in Catch	83	0	5,668	2,000	0	0	7,751
Total	Percent of Sample	0.7	0.4	70.1	27.0	0.7	1.1	100.0
	Number in Catch	167	83	16,253	6,251	167	250	23,171
	Standard Error	118	83	637	618	118	144	

Appendix E.2. Temporally stratified age and sex composition of the chum salmon harvested in the Eastern District commercial common property purse seine fishery, 1990.

		Brood Year and Age Group				
		1987	1986	1985	1984	
		0.2	0.3	0.4	0.5	Total
Stratum Dates: 06/28 - 07/16						
Sampling Dates: 06/29						
Sample Size: 392						
Female	Percent of Sample	0.0	22.7	36.7	1.3	60.7
	Number in Catch	0	12,646	20,462	710	33,818
Male	Percent of Sample	0.0	13.0	26.0	0.3	39.3
	Number in Catch	0	7,247	14,494	142	21,883
Total	Percent of Sample	0.0	35.7	62.8	1.5	100.0
	Number in Catch	0	19,893	34,955	853	55,701
	Standard Error	0	1,350	1,362	346	
Stratum Dates: 07/19 - 08/04						
Sampling Dates: 07/27						
Sample Size: 273						
Female	Percent of Sample	0.0	7.3	46.9	0.4	54.6
	Number in Catch	0	3,142	20,108	157	23,407
Male	Percent of Sample	0.0	4.4	41.0	0.0	45.4
	Number in Catch	0	1,885	17,595	0	19,480
Total	Percent of Sample	0.0	11.7	87.9	0.4	100.0
	Number in Catch	0	5,027	37,703	157	42,887
	Standard Error	0	836	848	157	
Stratum Dates: 08/06 - 08/25						
Sampling Dates: 08/14						
Sample Size: 347						
Female	Percent of Sample	0.3	5.5	45.8	2.0	53.6
	Number in Catch	158	2,998	25,090	1,105	29,350
Male	Percent of Sample	0.3	6.6	37.8	1.7	46.4
	Number in Catch	158	3,629	20,672	947	25,406
Total	Percent of Sample	0.6	12.1	83.6	3.7	100.0
	Number in Catch	316	6,628	45,761	2,051	54,756
	Standard Error	223	960	1,091	559	
Strata Combined: 06/28 - 08/25						
Sampling Dates: 06/29 - 08/14						
Sample Size: 1,012						
Female	Percent of Sample	0.1	12.3	42.8	1.3	56.5
	Number in Catch	158	18,786	65,660	1,972	86,576
Male	Percent of Sample	0.1	8.3	34.4	0.7	43.5
	Number in Catch	158	12,761	52,760	1,089	66,768
Total	Percent of Sample	0.2	20.6	77.2	2.0	100.0
	Number in Catch	316	31,548	118,420	3,061	153,344
	Standard Error	223	1,856	1,940	676	

Appendix E.3. Temporally stratified age and sex composition of the chum salmon harvested in the Northern District commercial common property purse seine fishery, 1990.

		Brood Year and Age Group				
		1987	1986	1985	1984	
		0.2	0.3	0.4	0.5	Total
<hr/>						
Stratum Dates: 06/28 - 07/05						
Sampling Dates: 06/29						
Sample Size: 80						
Female	Percent of Sample	0.0	6.3	36.3	1.3	43.8
	Number in Catch	0	1,807	10,480	361	12,648
Male	Percent of Sample	0.0	6.3	48.8	1.3	56.3
	Number in Catch	0	1,807	14,094	361	16,262
Total	Percent of Sample	0.0	12.5	85.0	2.5	100.0
	Number in Catch	0	3,614	24,574	723	28,910
	Standard Error	0	1,076	1,161	508	
<hr/>						
Stratum Dates: 07/09 - 07/30						
Sampling Dates: 07/27						
Sample Size: 311						
Female	Percent of Sample	0.3	31.2	18.0	0.3	49.8
	Number in Catch	78	7,586	4,380	78	12,122
Male	Percent of Sample	0.6	22.2	26.0	1.3	50.2
	Number in Catch	156	5,396	6,335	313	12,200
Total	Percent of Sample	1.0	53.4	44.1	1.6	100.0
	Number in Catch	235	12,982	10,714	391	24,322
	Standard Error	135	689	686	174	
<hr/>						
Stratum Dates: 08/02 - 08/25						
Sampling Dates: 08/08						
Sample Size: 252						
Female	Percent of Sample	0.0	9.5	47.6	1.2	58.3
	Number in Catch	0	2,115	10,577	264	12,956
Male	Percent of Sample	0.0	6.3	35.3	0.0	41.7
	Number in Catch	0	1,410	7,844	0	9,255
Total	Percent of Sample	0.0	15.9	82.9	1.2	100.0
	Number in Catch	0	3,526	18,421	264	22,211
	Standard Error	0	512	527	152	
<hr/>						
Strata Combined: 06/28 - 08/25						
Sampling Dates: 06/29 - 08/08						
Sample Size: 643						
Female	Percent of Sample	0.1	15.3	33.7	0.9	50.0
	Number in Catch	78	11,508	25,436	704	37,726
Male	Percent of Sample	0.2	11.4	37.5	0.9	50.0
	Number in Catch	156	8,613	28,273	674	37,717
Total	Percent of Sample	0.3	26.7	71.2	1.8	100.0
	Number in Catch	235	20,121	53,709	1,378	75,443
	Standard Error	135	1,376	1,448	558	

Appendix E.4. Temporally stratified age and sex composition of the chum salmon harvested in the Coghill District commercial common property purse seine and gillnet fisheries, 1990.

		Brood Year and Age Group					Total
		1987	1986	1985	1984	1983	
		0.2	0.3	0.4	0.5	0.6	
Stratum Dates: 06/14 - 06/22 ^{a,b}							
Sampling Dates: 06/23							
Sample Size: 375							
Female	Percent of Sample	0.0	28.8	33.6	1.1	0.0	63.5
	Number in Catch	0	39,664	46,275	1,469	0	87,408
Male	Percent of Sample	0.5	9.9	25.6	0.3	0.0	36.3
	Number in Catch	735	13,589	35,257	367	0	49,948
Total	Percent of Sample	0.5	38.9	59.2	1.3	0.0	100.0
	Number in Catch	735	53,620	81,532	1,836	0	137,723
	Standard Error	519	3,472	3,500	817	0	
Stratum Dates: 06/25 - 06/26 ^{a,b}							
Sampling Dates: 06/26 - 06/27							
Sample Size: 364							
Female	Percent of Sample	0.3	37.4	39.3	1.4	0.0	78.3
	Number in Catch	105	14,347	15,086	527	0	30,066
Male	Percent of Sample	0.0	6.0	15.4	0.0	0.0	21.4
	Number in Catch	0	2,321	5,908	0	0	8,229
Total	Percent of Sample	0.3	43.4	54.9	1.4	0.0	100.0
	Number in Catch	105	16,668	21,099	527	0	38,400
	Standard Error	105	999	1,003	235	0	
Stratum Dates: 06/28 - 07/03 ^{a,b}							
Sampling Dates: 07/03 - 07/04							
Sample Size: 414							
Female	Percent of Sample	0.5	33.6	26.6	0.2	0.2	61.1
	Number in Catch	224	15,537	12,296	112	112	28,280
Male	Percent of Sample	0.0	16.9	22.0	0.0	0.0	38.9
	Number in Catch	0	7,825	10,172	0	0	17,997
Total	Percent of Sample	0.5	50.5	48.6	0.2	0.2	100.0
	Number in Catch	224	23,362	22,468	112	112	46,277
	Standard Error	158	1,139	1,138	112	112	
Stratum Dates: 07/23 - 07/30 ^{b,c}							
Sampling Dates: 07/27							
Sample Size: 351							
Female	Percent of Sample	0.9	41.9	23.1	0.0	0.0	65.8
	Number in Catch	337	16,526	9,106	0	0	25,970
Male	Percent of Sample	0.0	17.1	16.8	0.3	0.0	34.2
	Number in Catch	0	6,745	6,633	112	0	13,491
Total	Percent of Sample	0.9	59.0	39.9	0.3	0.0	100.0
	Number in Catch	337	23,272	15,739	112	0	39,461
	Standard Error	194	1,038	1,033	112	0	

-Continued-

Appendix E.4. (Page 2 of 2)

		Brood Year and Age Group					Total
		1987	1986	1985	1984	1983	
		0.2	0.3	0.4	0.5	0.6	
Stratum Dates: 08/02 – 08/04							
Sampling Dates: 08/04							
Sample Size: 322							
Female	Percent of Sample	0.0	19.6	36.6	0.0	0.0	56.2
	Number in Catch	0	3,919	7,340	0	0	11,259
Male	Percent of Sample	0.0	10.6	33.2	0.0	0.0	43.8
	Number in Catch	0	2,115	6,656	0	0	8,770
Total	Percent of Sample	0.0	30.1	69.9	0.0	0.0	100.0
	Number in Catch	0	6,034	13,995	0	0	20,029
	Standard Error	0	513	513	0	0	
Stratum Dates: 08/06 – 09/23 ^d							
Sampling Dates: 08/07							
Sample Size: 288							
Female	Percent of Sample	0.0	19.1	28.8	0.0	0.0	47.9
	Number in Catch	0	5,781	8,724	0	0	14,504
Male	Percent of Sample	0.0	13.5	38.2	0.3	0.0	52.1
	Number in Catch	0	4,099	11,561	105	0	15,766
Total	Percent of Sample	0.0	32.6	67.0	0.3	0.0	100.0
	Number in Catch	0	9,880	20,285	105	0	30,270
	Standard Error	0	838	840	105	0	
Strata Combined: 06/14 – 09/23							
Sampling Dates: 06/23 – 08/07							
Sample Size: 2,114							
Female	Percent of Sample	0.2	30.7	31.7	0.7	0.0	63.3
	Number in Catch	666	95,775	98,826	2,108	112	197,487
Male	Percent of Sample	0.2	11.8	24.4	0.2	0.0	36.6
	Number in Catch	735	36,694	76,187	585	0	114,200
Total	Percent of Sample	0.4	42.6	56.1	0.9	0.0	100.0
	Number in Catch	1,401	132,836	175,119	2,693	112	312,160
	Standard Error	585	4,049	4,073	871	112	

^a Gillnets only permitted.

^b Esther subdistrict only.

^c Beginning 7/23/90 both gillnets and purse seines permitted.

^d Esther subdistrict closed 8/13–8/14. Entire Coghill District opened for 56 hours beginning 8/17. Esther subdistrict extended till 8/22 on 8/19 and opened to continuous fishing on 8/22.

Appendix E.5. Temporally stratified age and sex composition of chum salmon harvested in the Eshamy District commercial common property gillnet fisheries, 1990.

		Brood Year and Age Group					Total
		1987	1986	1985	1984	1983	
		0.2	0.3	0.4	0.5	0.6	
Stratum Dates: 06/11 - 06/16							
Sampling Dates: 06/13							
Sample Size: 383							
Female	Percent of Sample	0.0	48.6	22.2	0.8	0.0	71.5
	Number in Catch	0	57,725	26,380	931	0	85,035
Male	Percent of Sample	0.0	20.9	7.6	0.0	0.0	28.5
	Number in Catch	0	24,828	9,000	0	0	33,828
Total	Percent of Sample	0.0	69.5	29.8	0.8	0.0	100.0
	Number in Catch	0	82,552	35,380	931	0	118,863
	Standard Error	0	2,801	2,781	536	0	
Stratum Dates: 06/17 - 06/23							
Sampling Dates: 06/20 - 06/21							
Sample Size: 369							
Female	Percent of Sample	0.5	37.7	28.5	0.5	0.0	67.2
	Number in Catch	322	22,406	16,925	322	0	39,976
Male	Percent of Sample	0.3	17.9	13.8	0.8	0.0	32.8
	Number in Catch	161	10,639	8,221	484	0	19,505
Total	Percent of Sample	0.8	55.6	42.3	1.4	0.0	100.0
	Number in Catch	484	33,045	25,146	806	0	59,481
	Standard Error	278	1,541	1,532	358	0	
Stratum Dates: 06/24 - 06/30							
Sampling Dates: 06/28 - 06/29							
Sample Size: 369							
Female	Percent of Sample	0.3	42.5	18.4	0.0	0.0	61.2
	Number in Catch	217	34,145	14,789	0	0	49,151
Male	Percent of Sample	0.3	27.1	11.1	0.3	0.0	38.8
	Number in Catch	217	21,748	8,917	217	0	31,100
Total	Percent of Sample	0.5	69.6	29.5	0.3	0.0	100.0
	Number in Catch	435	55,893	23,706	217	0	80,251
	Standard Error	307	1,923	1,909	217	0	

-Continued-

Appendix E.5. (Page 2 of 2)

		Brood Year and Age Group					Total
		1987	1986	1985	1984	1983	
		0.2	0.3	0.4	0.5	0.6	
Stratum Dates: 07/01 - 07/10							
Sampling Dates: 07/07							
Sample Size: 349							
Female	Percent of Sample	0.6	47.3	15.2	0.6	0.0	63.6
	Number in Catch	427	35,229	11,316	427	0	47,399
Male	Percent of Sample	0.3	30.1	6.0	0.0	0.0	36.4
	Number in Catch	214	22,419	4,484	0	0	27,116
Total	Percent of Sample	0.9	77.4	21.2	0.6	0.0	100.0
	Number in Catch	641	57,648	15,800	427	0	74,515
	Standard Error	369	1,672	1,633	302	0	
Stratum Dates: 07/11 - 07/17							
Sampling Dates: 07/14							
Sample Size: 365							
Female	Percent of Sample	0.0	51.0	19.5	0.5	0.3	71.2
	Number in Catch	0	8,112	3,096	87	44	11,339
Male	Percent of Sample	0.0	18.4	10.1	0.3	0.0	28.8
	Number in Catch	0	2,922	1,614	44	0	4,579
Total	Percent of Sample	0.0	69.3	29.6	0.8	0.3	100.0
	Number in Catch	0	11,034	4,710	131	44	15,918
	Standard Error	0	385	381	75	44	
Stratum Dates: 07/18 - 08/28							
Sampling Dates: 08/01							
Sample Size: 341							
Female	Percent of Sample	0.9	54.0	9.4	0.9	0.0	65.1
	Number in Catch	90	5,524	961	90	0	6,665
Male	Percent of Sample	0.0	23.8	11.1	0.0	0.0	34.9
	Number in Catch	0	2,432	1,141	0	0	3,573
Total	Percent of Sample	0.9	77.7	20.5	0.9	0.0	100.0
	Number in Catch	90	7,956	2,102	90	0	10,238
	Standard Error	52	231	224	52	0	
Strata Combined: 06/11 - 08/28							
Sampling Dates: 06/13 - 08/01							
Sample Size: 2,176							
Female	Percent of Sample	0.3	45.4	20.4	0.5	0.0	66.7
	Number in Catch	1,057	163,141	73,467	1,858	44	239,566
Male	Percent of Sample	0.2	23.7	9.3	0.2	0.0	33.3
	Number in Catch	592	84,987	33,376	745	0	119,700
Total	Percent of Sample	0.5	69.1	29.7	0.7	0.0	100.0
	Number in Catch	1,649	248,128	106,843	2,602	44	359,266
	Standard Error	557	4,113	4,072	750	44	

Appendix E.6. Temporally stratified age and sex composition of the chum salmon harvested in the Southwestern District commercial common property purse seine fishery, 1990.

		Brood Year and Age Group			Total
		1987	1986	1985	
		0.2	0.3	0.4	
<hr/>					
Stratum Dates:	07/23 - 07/30				
Sampling Dates:	07/27				
Sample Size:	161				
<hr/>					
Female	Percent of Sample	0.0	24.8	44.7	69.6
	Number in Catch	0	1,917	3,450	5,367
Male	Percent of Sample	0.0	12.4	16.8	29.2
	Number in Catch	0	958	1,294	2,252
Total	Percent of Sample	0.0	37.9	62.1	100.0
	Number in Catch	0	2,923	4,792	7,715
	Standard Error	0	296	296	
<hr/>					
Stratum Dates:	08/02 - 08/28				
Sampling Dates:	08/07 - 08/08				
Sample Size:	68				
<hr/>					
Female	Percent of Sample	1.5	20.6	39.7	61.8
	Number in Catch	298	4,171	8,044	12,513
Male	Percent of Sample	1.5	8.8	27.9	38.2
	Number in Catch	298	1,788	5,661	7,746
Total	Percent of Sample	2.9	29.4	67.6	100.0
	Number in Catch	596	5,959	13,705	20,259
	Standard Error	418	1,128	1,158	
<hr/>					
Strata Combined:	07/23 - 08/28				
Sampling Dates:	07/27 - 08/08				
Sample Size:	229				
<hr/>					
Female	Percent of Sample	1.1	21.8	41.1	63.9
	Number in Catch	298	6,088	11,494	17,880
Male	Percent of Sample	1.1	9.8	24.9	35.7
	Number in Catch	298	2,746	6,954	9,998
Total	Percent of Sample	2.1	31.7	66.1	100.0
	Number in Catch	596	8,832	18,497	27,974
	Standard Error	418	1,166	1,195	

APPENDIX F: SALMON ESCAPEMENTS TO COASTAL STREAMS IN PRINCE WILLIAM SOUND

Appendix F.1. Daily escapement counts of sockeye, chinook, pink, and chum salmon through the Coghill River weir, 1990.

Date	Daily Escapement							
	Sockeye		Chinook		Pink		Chum	
	Daily	Cumulative	Daily	Cumulative	Daily	Cumulative	Daily	Cumulative
06/25	12	12	0	0	0	0	0	0
06/26	136	148	0	0	0	0	0	0
06/27	159	307	0	0	0	0	0	0
06/28	533	840	0	0	0	0	0	0
06/29	621	1,461	0	0	0	0	0	0
06/30	292	1,753	0	0	0	0	0	0
07/01	80	1,833	0	0	0	0	0	0
07/02	0	1,833	0	0	0	0	0	0
07/03	0	1,833	0	0	0	0	0	0
07/04	0	1,833	0	0	0	0	0	0
07/05	465	2,298	0	0	0	0	0	0
07/06	1,775	4,073	2	2	0	0	8	8
07/07	736	4,809	0	2	0	0	6	14
07/08	338	5,147	0	2	0	0	8	22
07/09	270	5,417	0	2	0	0	0	22
07/10	367	5,784	0	2	0	0	3	25
07/11	79	5,863	0	2	0	0	0	25
07/12	309	6,172	0	2	0	0	1	26
07/13	500	6,672	0	2	0	0	0	26
07/14	0	6,672	0	2	0	0	0	26
07/15	0	6,672	0	2	0	0	0	26
07/16	40	6,712	0	2	1	1	0	26
07/17	168	6,880	1	3	5	6	2	28
07/18	127	7,007	0	3	1	7	0	28
07/19	256	7,263	0	3	2	9	2	30
07/20	384	7,647	1	4	10	19	16	46
07/21	521	8,168	1	5	17	36	14	60
07/22	284	8,452	0	5	15	51	5	65
07/23	190	8,642	0	5	3	54	14	79
07/24	148	8,790	2	7	2	56	15	94
07/25	159	8,949	0	7	12	68	18	112
Total		8,949		7		68		112

Appendix F.2. Daily escapement counts of sockeye, coho, pink, and chum salmon through the weir at the head of Eshamy Lagoon, 1990.

Date	Daily Escapement							
	Sockeye		Coho		Pink		Chum	
	Daily	Cumulative	Daily	Cumulative	Daily	Cumulative	Daily	Cumulative
07/08	35	35	0	0	0	0	0	0
07/09	18	53	0	0	0	0	0	0
07/10	4	57	0	0	0	0	0	0
07/11	2	59	0	0	0	0	0	0
07/12	0	59	0	0	0	0	0	0
07/13	46	105	0	0	0	0	0	0
07/14	1	106	0	0	0	0	0	0
07/15	2	108	0	0	0	0	0	0
07/16	3	111	0	0	0	0	0	0
07/17	0	111	0	0	0	0	0	0
07/18	21	132	0	0	0	0	0	0
07/19	21	153	0	0	0	0	0	0
07/20	51	204	0	0	1	1	0	0
07/21	44	248	0	0	4	5	0	0
07/22	9	257	0	0	0	5	0	0
07/23	6	263	0	0	4	9	0	0
07/24	17	280	0	0	4	13	0	0
07/25	12	292	0	0	2	15	0	0
07/26	99	391	0	0	5	20	0	0
07/27	443	834	0	0	15	35	0	0
07/28	854	1,688	0	0	88	123	0	0
07/29	85	1,773	0	0	2	125	0	0
07/30	891	2,664	1	1	83	208	0	0
07/31	566	3,230	0	1	49	257	0	0
08/01	189	3,419	0	1	12	269	0	0
08/02	365	3,784	0	1	74	343	0	0
08/03	362	4,146	0	1	55	398	0	0

-Continued-

Appendix F.2. (page 2 of 2)

Daily Escapement								
Date	Sockeye		Coho		Pink		Chum	
	Daily	Cumulative	Daily	Cumulative	Daily	Cumulative	Daily	Cumulative
08/04	580	4,726	0	1	85	483	1	1
08/05	272	4,998	0	1	27	510	4	5
08/06	0	4,998	0	1	0	510	0	5
08/07	0	4,998	0	1	0	510	0	5
08/08	30	5,028	0	1	6	516	0	5
08/09	757	5,785	1	2	35	551	0	5
08/10	2,230	8,015	10	12	353	904	0	5
08/11	977	8,992	8	20	223	1,127	0	5
08/12	1,191	10,183	30	50	216	1,343	0	5
08/13	1,378	11,561	120	170	326	1,669	0	5
08/14	636	12,197	52	222	75	1,744	0	5
08/15	244	12,441	10	232	64	1,808	0	5
08/16	500	12,941	9	241	73	1,881	0	5
08/17	96	13,037	2	243	23	1,904	0	5
08/18	309	13,346	12	255	70	1,974	0	5
08/19	484	13,830	6	261	47	2,021	0	5
08/20	150	13,980	10	271	44	2,065	0	5
08/21	156	14,136	0	271	48	2,113	0	5
08/22	55	14,191	9	280	21	2,134	0	5
08/23	13	14,204	0	280	4	2,138	0	5
08/24	0	14,204	0	280	0	2,138	0	5
08/25	8	14,212	1	281	0	2,138	0	5
08/26	0	14,212	0	281	0	2,138	0	5
08/27	11	14,223	0	281	31	2,169	0	5
08/28	4	14,227	2	283	20	2,189	0	5
08/29	7	14,234	3	286	20	2,209	0	5
08/30	0	14,234	0	286	0	2,209	0	5
Total		14,234		286		2,209		5

Appendix F.3. Daily escapement counts of sockeye, chinook, and chum salmon through the Jackpot River weir, 1990.

Date	Daily Escapements					
	Sockeye		Chinook		Chum	
	Daily	Cumulative	Daily	Cumulative	Daily	Cumulative
06/29	17	17	0	0	0	0
06/30	0	17	0	0	0	0
07/01	17	34	0	0	0	0
07/02	317	351	0	0	0	0
07/03	72	423	0	0	0	0
07/04	0	423	0	0	0	0
07/05	0	423	0	0	0	0
07/06	0	423	0	0	0	0
07/07	0	423	0	0	0	0
07/08	0	423	0	0	0	0
07/09	17	440	0	0	0	0
07/10	1,207	1,647	0	0	0	0
07/11	3	1,650	0	0	0	0
07/12	0	1,650	0	0	0	0
07/13	0	1,650	1	1	0	0
07/14	2	1,652	0	1	0	0
07/15	0	1,652	2	3	2	2
07/16	1	1,653	0	3	0	2
07/17	2	1,655	0	3	0	2
07/18	17	1,672	0	3	0	2
07/19	21	1,693	0	3	0	2
07/20	168	1,861	0	3	0	2
07/21	150	2,011	0	3	2	4
07/22	31	2,042	0	3	1	5
07/23	19	2,061	0	3	0	5
07/24	17	2,078	0	3	0	5
07/25	25	2,103	8	11	0	5
07/26	1	2,104	0	11	1	6
07/27	3	2,107	0	11	0	6
07/28	0	2,107	0	11	0	6
07/29	100	2,207	0	11	0	6
07/30	0	2,207	0	11	0	6
Total		2,207		11		6

Appendix F.4 Sockeye salmon aerial escapement counts from selected systems in Prince William Sound, 1990.

Stream Name	Stream Number	Weekly Count (week ending dates) ^a									
		14-Jul	21-Jul	28-Jul	04-Aug	11-Aug	18-Aug	25-Aug	01-Sep	08-Sep	15-Sep
Robe River	137	NS	450	300	60	NS	NS	NS	NS	0	NS
Billy's Hole	218	100	0	800	1,900	1,400	630	900	110	210	10
Wells River	234	0	0	0	0	0	0	0	NS	12	0
Miners Lake	244	NS	NS	NS	2,600	160	25	NS	27	NS	NS
Red Lake	300	0	0	0	1,500	0	0	0	0	0	NS
Hobo Creek	417	0	0	0	0	0	0	2	NS	0	NS
Halferty Creek	454	0	0	0	0	0	0	270	500	0	NS
Cochrane Creek	461	0	0	0	0	0	0	0	0	0	NS
Shrode Lake	476	0	0	0	0	0	630	800	650	350	NS
Jackpot Lakes	608	0	0	0	310	0	140	0	60	0	NS
Bainbridge Creek	630	0	0	0	25	0	50	0	60	0	NS
Point Creek	702	NS	0	0	NS	0	0	0	0	0	NS
Cabin Creek	747	NS	0	0	0	0	0	0	0	0	NS
Udall Creek	770	NS	0	0	0	0	0	0	0	0	NS
Pautzke Creek	775	NS	0	0	0	0	0	0	0	0	NS
Total		100	450	1,100	6,395	1,560	1,475	1,972	1,407	572	10

^a Counts contained in this table are obtained in conjunction with the regular pink and chum aerial survey program. Many of these sockeye systems are difficult to survey by air, and thus the counts do not necessarily represent total live abundance at a particular time.

Appendix F.5. Weekly aerial estimates of the escapement of live pink salmon to selected streams in Prince William Sound, 1990.

District	Stream Number & Name	Week Ending Date															Total	Adjusted Total
		06/23	06/30	07/07	07/14	07/21	07/28	08/04	08/11	08/18	08/25	09/01	09/08	09/15	09/22	09/29		
Eastern	2 Hartney Creek	NS	NS	0	0	320	800	1,200	1,800	3,500	1,200	2,150	300	NS	NS	NS	11,270	4,700
	5 Eccles Creek	NS	NS	0	0	0	0	25	600	700	0	50	60	NS	NS	NS	1,435	700 peak
	8 Fleming Creek	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0	0
	11 Humpy Creek	0	0	0	10	250	150	500	350	170	400	300	220	NS	NS	NS	2,350	950
	Orca Inlet 221-10	0	0	0	10	570	950	1,725	2,750	4,370	1,600	2,500	580	0	0	0	15,065	6,350
	19 Twin Lakes Creek	0	0	0	0	0	0	50	35	300	1,100	1,200	200	NS	NS	NS	2,885	1,200 peak
	20 Spring Creek	0	0	0	0	20	0	0	10	30	100	150	140	NS	NS	NS	450	190
	21 Rogue Creek	0	0	0	0	0	0	50	10	150	150	250	170	NS	NS	NS	780	340
	23 Chase Creek	0	0	12	0	0	0	0	0	500	300	200	25	NS	NS	NS	1,037	500 peak
	35 Koppen Creek	0	0	0	0	100	0	8,000	5,705	12,600	3,100	22,000	11,500	11,500	NS	NS	74,505	29,860
	36 Sheep River	0	0	100	0	0	750	50	3,640	13,400	11,200	7,000	10,600	5,500	NS	NS	52,240	20,960
	37 Allen Creek	0	0	0	0	0	0	800	300	1,300	1,000	1,200	600	NS	NS	NS	5,200	2,560
	Simpson/Sheep 221-20	0	0	112	0	120	750	8,950	9,700	28,280	16,950	32,000	23,235	17,000	0	0	137,097	55,610
	41 Pass Creek	0	0	0	0	0	0	50	0	3,140	4,500	2,200	1,600	NS	NS	NS	11,490	4,630
	45 Plateau Creek	0	0	0	0	0	0	3,000	200	1,910	575	900	1,150	NS	NS	NS	7,735	4,890
	46 Comfort Creek	0	0	150	0	0	0	2,400	500	4,400	4,300	3,500	2,800	300	NS	NS	18,350	7,430
	48 Beartrap River	0	0	200	0	0	0	500	20,000	16,300	29,500	20,000	9,600	4,800	NS	NS	100,900	40,480
	49 Cataract Creek	0	0	0	0	20	0	400	500	400	900	800	700	NS	NS	NS	3,720	1,500
	51 Olsen Creek	0	0	280	0	0	0	1,000	4,900	12,000	4,900	18,000	5,500	4,200	NS	NS	50,780	20,480
	52 Control Creek	0	0	0	50	300	1,600	3,200	5,500	7,200	10,000	13,000	4,500	3,800	NS	NS	49,150	19,690
	54 Carlsen Creek	0	0	0	0	30	0	100	500	320	1,100	550	510	0	NS	NS	3,110	1,260
	56 St. Matthews Creek	0	0	0	0	0	70	300	4,000	2,300	2,000	13,000	3,100	NS	NS	NS	24,770	13,000 peak
	Gravina 221-30	0	0	630	50	350	1,670	10,950	36,100	47,970	57,775	71,950	29,460	13,100	0	0	270,005	113,360
	71 Two Moon Creek	NS	NS	0	NS	NS	NS	0	0	NS	1,000	NS	NS	NS	NS	NS	1,000	1,000
	73 Tundra Creek	NS	NS	0	NS	NS	NS	200	0	NS	1,000	NS	NS	NS	NS	NS	1,200	1,000 peak
	76 Irish Creek	0	0	0	0	150	6,000	24,500	8,000	15,300	17,500	13,500	4,200	2,500	NS	NS	91,650	36,750
	80 Whalen Creek	0	0	0	0	500	500	2,300	5,000	2,300	4,100	9,000	3,800	4,900	NS	NS	32,400	13,260
	83 Keta Creek	0	NS	0	0	0	1,100	1,400	2,500	2,400	1,400	600	3,200	5,000	NS	NS	17,600	7,700
	87 Sunny River	0	NS	0	125	0	0	0	1,350	1,900	0	320	0	NS	NS	NS	3,695	1,930
	88 Short Creek	0	NS	0	0	100	0	100	600	950	750	300	700	300	NS	NS	3,800	1,580
	89 Fish Creek	0	0	0	0	0	0	2,900	9,000	4,700	5,000	10,000	4,800	8,500	NS	NS	44,900	19,700
	92 Shale Creek	0	0	0	0	20	0	300	300	770	2,500	500	1,100	900	NS	NS	6,390	2,570
	93 Kirkwood Creek	0	0	0	0	0	200	530	300	560	1,200	400	240	100	NS	NS	3,530	1,530
	94 Rock Creek	0	0	0	0	0	150	50	0	1,100	3,500	1,100	600	0	NS	NS	6,500	3,500 peak
	99 Lagoon Creek	0	0	0	1,000	100	900	700	8,000	3,200	12,900	3,000	4,200	12,000	NS	NS	46,000	19,000
	Fidalgo 221-40	0	0	0	1,125	870	8,850	32,980	35,050	33,180	50,850	38,400	23,160	34,200	0	0	258,665	109,520
	106 Gladhough Creek	0	0	0	0	0	0	400	1,100	1,900	2,700	900	500	NS	NS	NS	7,500	3,240
	107 Black Creek	0	0	0	0	0	0	50	600	300	500	400	300	NS	NS	NS	2,150	890
	114 Turner Creek	0	0	0	0	0	0	100	300	1,100	1,800	600	240	200	NS	NS	4,340	1,800
	115 Millard Creek	0	0	0	100	500	1,700	5,250	5,000	3,700	9,200	28,000	3,000	7,500	NS	NS	63,950	28,000 peak
	116 Duck River	0	0	0	0	0	0	200	0	12,300	53,000	36,000	5,300	25,000	NS	NS	131,800	55,400
	117 Indian Creek	20	0	20	0	0	7,200	6,300	3,000	6,200	9,600	11,500	2,900	2,600	NS	NS	49,340	19,750
	120 Donaldson Creek	0	0	0	0	0	250	400	200	200	1,000	500	400	150	NS	NS	3,100	1,390
	121 Levshakoff Creek	0	0	0	0	150	50	500	800	2,400	4,800	1,000	950	300	NS	NS	10,950	4,800 peak
	122 No Name Creek	0	0	0	NS	0	0	200	NS	30	500	0	400	0	NS	NS	1,130	680
	123 Gregorieff Creek	0	0	0	0	0	100	250	20	1,400	1,800	600	1,800	800	NS	NS	6,770	2,770
	127 Naomoff River	0	NS	0	0	600	400	1,500	NS	1,500	1,790	2,500	60	NS	NS	NS	8,350	4,300
	129 Vlasoff Creek	0	0	0	0	0	100	450	300	600	1,300	900	550	1,000	NS	NS	5,200	2,140
	152 Twin Falls Creek	0	0	0	500	600	3,500	800	3,700	70	5,200	4,500	500	500	NS	NS	19,870	8,250
	153 Stellar Creek	0	0	0	0	800	2,000	4,200	4,000	6,000	9,200	3,200	1,200	1,000	NS	NS	31,600	13,120
	Valdez Arm 221-50	20	0	20	600	2,650	15,300	20,600	19,020	37,700	102,390	90,600	18,100	39,050	0	0	346,050	146,530

-Continued-

Appendix F.5. (Pg 2 of 6)

District	Stream Number & Name	Week Ending Date															Total	Adjusted Total
		06/23	06/30	07/07	07/14	07/21	07/28	08/04	08/11	08/18	08/25	09/01	09/08	09/15	09/22	09/29		
	131 Gorge Creek - Port Valdez	0	0	0	0	0	50	500	400	50	700	50	0	NS	NS	NS	1,750	730
	133 Sawmill Creek	0	0	0	1,500	0	800	2,400	5,000	800	800	150	0	NS	NS	NS	11,450	5,480
	137 Lowe River	0	0	0	NS	800	900	0	NS	NS	NS	NS	10	NS	NS	NS	1,710	1,170
	143 Siwash Creek	0	0	0	0	0	1,500	2,400	3,000	670	300	25	0	NS	NS	NS	7,895	4,060
	145 Crooked Creek	0	0	0	0	0	300	530	0	90	0	0	0	NS	NS	NS	920	550
	148 Mineral Flats	0	0	0	0	0	0	0	0	70	0	0	300	0	NS	NS	370	300 peak
	Port Valdez 221-60	0	0	0	1,500	800	3,550	5,830	8,400	1,680	1,800	225	310	0	0	0	24,095	12,290
Eastern District TOTAL		20	0	762	3,285	5,360	31,070	81,035	111,020	153,180	231,365	235,675	94,845	103,350	0	0	1,050,967	443,660

District	Stream Number & Name	Week Ending Date															Total	Adjusted Total
		6/24	7/01	7/08	7/15	7/22	7/29	8/05	8/12	8/19	8/26	9/02	9/09	9/16	9/23	9/30		
Northern	204 Heather Bay	NS	NS	NS	NS	NS	NS	0	0	0		0	NS	NS	NS	NS	0	0
	208 Granite Cove	NS	NS	NS	NS	NS	NS	150	0	6		0	NS	NS	NS	NS	156	150
	209 Useless Creek	0	0	0	0	0	0	0	0	80		0	0	NS	NS	NS	80	80
	210 Elf Creek	0	0	0	NS	0	0	0	0	0	NS	0	0	NS	NS	NS	0	0
	213 Bench Mark Creek	0	0	0	0	0	0	300	0	0	20	0	20	0	NS	NS	340	320
	214 Long Creek	0	0	300	0	0	500	360	0	870	300	350	250	50	NS	NS	2,980	1,370
	216 Vanishing Creek	0	0	0	0	100	4,000	2,400	2,000	3,000	4,200	6,000	1,900	50	NS	NS	23,650	9,520
	217 Spring Creek	0	0	0	0	0	0	3,200	3,000	1,710	1,200	400	300	20	NS	NS	9,830	5,850 peak
	218 Billy's Creek	0	0	0	0	1,480	0	200	0	20	200	0	0	0	NS	NS	1,900	1,650
	221 Eickelberg Creek	0	0	0	0	0	0	200	100	700	NS	700	750	NS	NS	NS	2,450	1,380
	Columbia/Long 222-10	0	0	300	0	1,580	4,500	6,810	5,100	6,386	5,920	7,450	3,220	120	0	0	41,386	20,320
	224 Backyard Creek	0	0	0	0	0	0	1,700	2,000	4,400	600	NS	900	NS	NS	NS	9,600	5,160
	227 Granite Creek	0	0	0	0	0	0	300	700	4,800	4,700	NS	1,250	600	NS	NS	12,350	6,310
	229 Cedar Creek	0	0	0	25	300	500	1,700	700	6,700	11,000	NS	1,050	600	NS	NS	22,575	11,450
	232 Delta Creek	0	0	0	0	0	0	350	NS	700	200	NS	0	0	NS	NS	1,250	1,020
	233 Surplus Creek	0	0	0	NS	0	0	2,100	0	1,200	3,200	NS	100	0	NS	NS	6,600	4,560
	234 Wells River	0	0	0	0	1,000	1,500	4,600	4,000	5,800	2,900	NS	1,600	1,000	NS	NS	22,400	10,460
	257 Complex Creek	NS	NS	0	0	0	0	50	0		0	40	450	50	NS	NS	590	450 peak
	258 Williams Creek	NS	NS	0	0	0	0	0	0		0	0	0	0	NS	NS	0	0
	259 Jonah Creek	NS	NS	0	0	0	1,000	1,400	700	3,100	4,600	2,400	900	300	NS	NS	14,400	6,360
	263 Waterfall Creek	NS	NS	0	0	0	0	50	570	1,560	150	3,300	80	10	NS	NS	5,720	3,300 peak
	264 Siwash River	NS	NS	0	0	0	0	1,300	830	200	2,600	4,300	3,300	2,500	NS	NS	15,030	6,790
	265 Unakwik Creek	NS	NS	0	0	270	350	900	640	800	2,800	1,700	1,000	400	NS	NS	8,860	3,710
	Wells/Unakwik 222-20	0	0	0	25	1,570	3,350	14,450	10,140	29,260	32,750	11,740	10,630	5,460	0	0	119,375	59,570
	273 Schoppe Creek	NS	NS	0	0	0	0	500	2,800	3,200	4,500	600	1,800	500	NS	NS	13,900	5,860
	276 Black Bear Creek	NS	NS	0	0	0	0	8,400	6,500	5,500	13,000	8,400	1,600	550	NS	NS	43,950	22,620
	277 Dead Creek	NS	NS	0	0	0	0	50	100	2,400	400	40	200	240	NS	NS	3,430	2,400 peak
	278 Comeback Creek	NS	NS	0	0	0	0	1,100	200	700	450	400	300	280	NS	NS	3,430	2,030
	279 Canyon Creek	NS	NS	0	0	0	0	2,000	570	3,800	6,900	3,400	1,500	400	NS	NS	18,570	8,630
	282 Good Creek	NS	NS	0	0	0	0	500	2,900	2,900	3,000	1,700	1,200	1,000	NS	NS	13,200	5,580
	283 Bad Creek	NS	NS	0	0	0	0	100	140	2,600	1,000	400	300	150	NS	NS	4,690	2,600 peak
	289 Derlekson Creek	NS	NS	0	0	0	0	200	220	1,300	1,200	400	900	400	NS	NS	4,620	1,970
	Eaglek 222-30	0	0	0	0	0	0	12,850	13,430	22,400	30,450	15,340	7,800	3,520	0	0	105,790	51,690
	Northern District TOTAL	0	0	300	25	3,150	7,850	34,110	28,670	58,046	69,120	34,530	21,650	9,100	0	0	266,551	131,580
Unakwik	242 Cowpen Creek	NS	NS	NS	NS	0	NS	0	0	0	NS	0	NS	NS	NS	NS	0	0
Unakwik District TOTAL		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

-Continued-

Appendix F.5. (Pg 3 of 6)

District	Stream Number & Name	Week Ending Date															Total	Adjusted Total
		6/24	7/01	7/08	7/15	7/22	7/29	8/05	8/12	8/19	8/26	9/02	9/09	9/16	9/23	9/30		
Coghill	414 Harrison Creek	NS	NS	0	0	0	0	250	210	770	1,500	1,000	20	NS	NS	NS	3,750	1,650
	417 Hobo Creek	NS	NS	0	0	0	0	0	0	0	0	NS	20	NS	NS	NS	20	20
	421 Mill Creek	NS	NS	0	0	0	0	250	700	800	3,800	NS	300	NS	NS	NS	5,850	3,800 peak
	424 Old Creek	NS	NS	0	0	0	0	200	170	600	900	910	50	NS	NS	NS	2,830	1,250
	425 Hummer Creek	NS	NS	0	0	0	0	950	2,000	2,800	2,300	1,400	350	NS	NS	NS	9,800	4,490
	428 Pirate Creek	NS	NS	0	0	0	0	200	60	70	250	40	30	NS	NS	NS	650	380
	430 Meacham Creek	NS	NS	0	0	0	0	6,500	5,330	7,500	5,200	2,100	600	NS	NS	NS	27,230	14,790
	432 Swanson Creek	NS	NS	0	0	0	600	7,100	6,400	9,700	6,800	4,200	700	NS	NS	NS	35,500	14,560
	W. Port Wells 223-10	0	0	0	0	0	600	15,450	14,870	22,240	20,750	9,650	2,070	0	0	0	85,630	40,940
	303 Triple Creek	NS	NS	0	0	0	0	300	2,900	400	1,100	700	0	NS	NS	NS	5,400	2,900 peak
	307 Village Creek	NS	NS	0	0	0	0	200	530	400	400	300	200	NS	NS	NS	2,030	930
	Esther Passage 223-20	0	0	0	0	0	0	500	3,430	800	1,500	1,000	200	0	0	0	7,430	3,830
	310 Golden Lagoon	NS	NS	0	0	0	0	180	450	400	700	400	10	NS	NS	NS	2,140	960
314 Avery River	NS	NS	0	0	0	0	0	0	0	0	0	0	NS	NS	NS	0	0	
322 Coghill River - Below Weir	NS	NS	0	0	0	700	3,000	2,900	400	200	0	200	NS	NS	NS	7,400	3,380 peak	
3221 Coghill River - Lake Count	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0	0	
E. Port Wells 223-30	0	0	0	0	0	700	3,180	3,350	800	900	400	210	0	0	0	9,540	4,340	
Coghill District TOTAL		0	0	0	0	0	1,300	19,130	21,650	23,840	23,150	11,050	2,480	0	0	0	102,600	49,110
Northwestern	435 Logging Camp Creek	NS	NS	0	0	0	0	1,000	300	1,100	NS	950	50	NS	NS	NS	3,400	2,370
	450 Tebenkoff Creek	NS	NS	0	0	0	200	150	470	1,100	2,700	500	50	NS	NS	NS	5,170	2,700 peak
	451 Blackstone Creek	NS	NS	0	0	0	600	600	500	800	1,000	350	50	NS	NS	NS	3,900	1,920
	454 Halferty Creek	NS	NS	0	0	0	0	3,800	3,300	5,000	6,400	2,000	400	NS	NS	NS	20,900	10,640
	455 Paulson Creek	NS	NS	0	7,000	1,250	2,000	2,000	3,100	3,000	2,100	500	150	NS	NS	NS	21,100	12,640
	458 Parks Creek	NS	NS	0	300	0	300	800	2,200	3,000	1,600	445	300	NS	NS	NS	8,945	3,760
	461 Cochrane Creek	NS	NS	NS	0	0	0	200	1,800	800	430	150	80	NS	NS	NS	3,460	1,800 peak
	469 Wickett Creek	NS	NS	0	0	0	0	1,100	1,100	1,800	2,600	1,100	400	NS	NS	NS	8,100	3,900
	Passage/Cochrane 224-10	0	0	0	7,300	1,250	3,100	9,650	12,770	16,600	16,830	5,995	1,480	0	0	0	74,975	39,730
	471 Narrows Creek	NS	NS	0	0	0	0	150	20	100	400	275	NS	NS	NS	NS	945	470 peak
	476 Shrode Creek	NS	NS	0	0	0	0	13,100	2,700	1,500	1,300	12,400	400	NS	NS	NS	31,400	20,420
	479 Culross Creek	NS	NS	0	0	0	0	7,800	380	500	2,300	2,700	500	NS	NS	NS	14,180	10,350
	Culross Pass 224-30	0	0	0	0	0	0	21,050	3,100	2,100	4,000	15,375	900	0	0	0	46,525	31,240
480 Mink Creek	NS	NS	0	0	0	200	8,000	1,800	7,000	9,500	2,500	2,000	NS	NS	NS	31,000	12,520	
484 E. Finger Creek	NS	NS	0	0	0	700	4,800	1,400	3,000	800	1,500	200	NS	NS	NS	12,400	5,380	
485 W. Finger Creek	NS	NS	0	0	3,500	3,100	2,100	4,800	6,500	5,200	6,200	50	NS	NS	NS	31,450	14,680	
493 Most Creek	NS	NS	0	0	0	0	135	0	200	100	700	200	NS	NS	NS	1,335	700 peak	
495 Chimevsky Lagoon	NS	NS	0	0	0	3,000	4,000	900	500	1,100	1,000	1,000	NS	NS	NS	11,500	6,400	
498 McClure Creek	NS	NS	0	0	500	0	1,300	2,300	4,000	2,900	600	700	NS	NS	NS	12,300	5,220	
Nellie Juan 224-40	0	0	0	0	4,000	7,000	20,335	11,200	21,200	19,600	12,500	4,150	0	0	0	99,985	44,900	
Northwestern District TOTAL		0	0	0	7,300	5,250	10,100	51,035	27,070	39,900	40,430	33,870	6,530	0	0	0	221,485	115,870
Eshamy	506 Loomis Creek	NS	NS	NS	0	0	0	150	0	1,000	700	900	3,000	NS	NS	NS	5,750	3,000 peak
	507 Gunboat Creek	NS	NS	NS	0	0	0	0	0	0	370	350	500	NS	NS	NS	1,220	710
	508 North Shore - Eshamy Lagoon	NS	NS	NS	0	600	0	5,000	200	10,000	3,200	1,500	5,000	NS	NS	NS	25,500	10,560
	510 Elishansky Creek	NS	NS	NS	0	800	40	700	300	2,000	2,100	700	1,000	NS	NS	NS	7,640	3,540
	511 Eshamy - Below Weir	NS	NS	NS	0	0	0	0	0	NS	0	0	NS	NS	NS	NS	0	0
	5111 Eshamy River - Weir	NS	NS	NS	0	NS	0	60	NS	NS	NS	0	NS	NS	NS	NS	60	60
	Crafton Island TOTAL 225-30	0	0	0	0	1,400	40	5,910	500	13,000	6,370	3,450	9,500	0	0	0	40,170	17,870
Eshamy District TOTAL		0	0	0	0	1,400	40	5,910	500	13,000	6,370	3,450	9,500	0	0	0	40,170	17,870

- Continued -

Appendix F.5. (Pg 4 of 6)

Stream		Week Ending Date															Adjusted	
District	Number & Name	6/24	7/01	7/08	7/15	7/22	7/29	8/05	8/12	8/19	8/26	9/02	9/09	9/16	9/23	9/30	Total	Total
Southwestern	601 Paddy Creek	NS	NS	NS	0	0	500	1,900	400	2,000	2,100	1,800	2,700	NS	NS	NS	11,400	4,860
	602 Nactan Creek	NS	NS	NS	0	0	0	1,900	1,600	2,900	2,000	1,400	1,500	NS	NS	NS	11,300	5,660
	603 Ewan Creek	NS	NS	NS	0	0	0	10,000	1,200	8,000	4,900	2,600	8,000	NS	NS	NS	34,700	19,880
	604 Erb Creek	NS	NS	NS	0	300	700	1,500	1,500	2,500	2,900	1,600	2,000	NS	NS	NS	13,000	5,380
	608 Jackpot River	NS	NS	NS	90	600	700	5,700	2,100	10,500	9,400	800	1,500	NS	NS	NS	31,390	12,610
	610 Kompkoff River	NS	NS	NS	60	0	0	0	0	0	600	300	750	NS	NS	NS	1,710	750 peak
	611 Jackpot Bay – West Arm	NS	NS	NS	0	200	0	7,000	70	300	100	40	75	NS	NS	NS	7,785	7,000 peak
	612 Jackpot Bay – West Arm	NS	NS	NS	0	30	370	600	310	100	2,200	160	125	NS	NS	NS	3,895	2,200 peak
	613 Jackson Creek	NS	NS	NS	330	1,200	1,500	4,000	3,600	4,000	4,100	1,000	1,550	NS	NS	NS	21,280	8,710
	621 Totemoff Creek	NS	NS	NS	0	100	0	3,700	1,400	4,000	7,500	1,100	2,000	NS	NS	NS	19,800	7,980
	623 Brizgaloff Creek	NS	NS	NS	0	0	600	1,500	1,500	3,125	2,100	810	510	NS	NS	NS	10,145	4,420
	630 Bainbridge Creek	NS	NS	NS	150	230	300	1,500	1,250	4,100	3,500	1,250	3,700	NS	NS	NS	15,980	6,480
	632 Claw Creek	NS	NS	NS	0	200	220	500	130	1,300	530	180	1,100	NS	NS	NS	4,160	1,780
	633 Pablo Creek	NS	NS	NS	0	200	300	2,000	1,300	3,000	1,300	1,000	3,000	NS	NS	NS	12,100	4,960
	634 Whale Bay – B. Head – S. Arm	NS	NS	NS	170	0	0	0	0	500	1,000	500	1,000	NS	NS	NS	3,170	1,370
	636 Whale Creek	NS	NS	NS	0	0	20	1,100	1,400	500	1,500	100	700	NS	NS	NS	5,320	2,140
	Chenega 226–20	0	0	0	800	3,060	5,210	42,900	17,760	46,825	45,730	14,640	30,210	0	0	0	207,135	96,180
	682 Snug Harbor	NS	NS	NS	0	1,400	700	6,000	5,000	14,000	2,900	1,300	4,500	NS	NS	NS	35,800	15,160
	Knight Island 226–30	0	0	0	0	1,400	700	6,000	5,000	14,000	2,900	1,300	4,500	0	0	0	35,800	15,160
	655 Johnson Creek	NS	NS	NS	0	0	150	7,000	4,100	8,000	4,800	1,000	4,000	NS	NS	NS	29,050	11,710
	656 Halverson Creek	NS	NS	NS	0	530	600	4,000	2,100	1,000	900	250	3,000	NS	NS	NS	12,380	5,270
665 Bjorne Creek	NS	NS	NS	0	0	0	0	60	5	70	50	300	NS	NS	NS	485	300 peak	
666 O'Brien Creek	NS	NS	NS	0	0	0	1,000	800	750	1,600	200	300	NS	NS	NS	4,650	2,460	
670 Montgomery Creek	NS	NS	NS	0	0	0	0	30	0	0	250	1,500	NS	NS	NS	1,780	1,500 peak	
672 Latouche Island – S. Side	NS	NS	NS	0	0	350	200	2,100	500	NS	0	50	NS	NS	NS	3,200	2,100 peak	
673 Falls Creek	NS	NS	NS	0	0	0	3,000	0	4,000	1,800	1,000	2,500	NS	NS	NS	12,300	6,720	
676 Horseshoe Creek	NS	NS	NS	0	30	100	600	80	600	900	600	3,000	NS	NS	NS	5,910	3,000 peak	
677 Hayden Creek	NS	NS	NS	0	0	200	2,100	80	100	1,300	2,000	3,000	NS	NS	NS	8,780	3,630	
Bainbridge/Latouche 226–40	0	0	0	0	560	1,400	17,900	9,350	14,955	11,370	5,350	17,650	0	0	0	78,535	36,690	
653 Hogg Creek	NS	NS	NS	250	0	0	1,400	350	600	700	200	1,300	NS	NS	NS	4,800	2,070	
Port Bainbridge 226–50	0	0	0	250	0	0	1,400	350	600	700	200	1,300	0	0	0	4,800	2,070	
Southwestern District TOTAL		0	0	0	1,050	5,020	7,310	68,200	32,460	76,380	60,700	21,490	53,660	0	0	0	326,270	150,100

-Continued-

Appendix F.5. (Pg 5 of 6)

District	Stream Number & Name	Week Ending Date															Total	Adjusted Total
		6/24	7/01	7/08	7/15	7/22	7/29	8/05	8/12	8/19	8/26	9/02	9/09	9/16	9/23	9/30		
Montague	702 Point Creek	NS	NS	NS	NS	0	0	NS	0	50	520	5,500	250	NS	NS	NS	6,320	5,500 peak
	703 Clam Beach Creek	NS	NS	NS	NS	0	0	NS	800	40	130	600	275	NS	NS	NS	1,845	1,220
	707 MacLeod Creek	NS	NS	NS	NS	0	4	NS	700	3,000	3,740	1,650	3,300	NS	NS	NS	12,394	5,100
	710 Hanning Creek	NS	NS	NS	NS	0	0	NS	760	900	1,500	1,800	500	NS	NS	NS	5,460	2,640
	711 Quadra Creek	NS	NS	NS	NS	60	60	NS	1,000	2,200	1,470	3,200	1,000	NS	NS	NS	8,990	3,840
	717 Montague Island - West Shore	NS	NS	NS	NS	0	0	NS	0	50	60	80	300	NS	NS	NS	490	300 peak
	718 Montague Island - West Shore	NS	NS	NS	NS	0	0	NS	20	30	100	460	50	NS	NS	NS	660	460 peak
	719 Montague Island - West Shore	NS	NS	NS	NS	0	0	NS	180	70	150	0	350	NS	NS	NS	750	410
	722 Montague Is. - Glacier Str.	NS	NS	NS	NS	0	0	0	0	0	0	0	0	NS	NS	NS	0	0
	724 Montague Is. - Glacier Str.	NS	NS	NS	NS	0	0	0	0	0	12	0	0	NS	NS	NS	12	12 peak
	725 Montague Island - West Shore	NS	NS	NS	NS	0	0	0	0	10	0	0	0	NS	NS	NS	10	10
	726 Montague Creek	NS	NS	NS	NS	0	0	0	0	0	0	30	0	NS	NS	NS	30	30
S. Montague 227-10		0	0	0	0	60	64	0	3,460	6,350	7,682	13,320	6,025	0	0	0	36,961	19,522
	738 Russell Creek	NS	NS	NS	NS	0	150	0	90	40	23	50	215	NS	NS	NS	568	320
	739 Swamp Creek	NS	NS	NS	NS	125	120	2,000	1,960	4,400	2,390	2,600	1,600	NS	NS	NS	15,195	6,150
	740 Kelez Creek	NS	NS	NS	NS	0	0	125	1,200	1,700	1,900	2,150	1,500	NS	NS	NS	8,575	3,500
	741 Chalmers River	NS	NS	NS	NS	0	350	1,400	1,500	2,000	2,600	2,220	1,000	NS	NS	NS	11,070	4,640
	744 Wilby Creek	NS	NS	NS	NS	0	0	270	1,200	2,500	2,300	2,600	1,500	NS	NS	NS	10,370	4,310
	745 Wild Creek	NS	NS	NS	NS	0	0	0	120	600	300	1,300	250	NS	NS	NS	2,570	1,300 peak
	746 Schuman Creek	NS	NS	NS	NS	0	0	250	450	1,000	2,400	1,600	800	NS	NS	NS	6,500	2,750
	747 Cabin Creek	NS	NS	NS	NS	0	0	16,000	4,200	16,200	9,510	13,200	7,000	NS	NS	NS	66,110	36,040
	748 Gilmour Creek	NS	NS	NS	NS	0	0	0	0	700	1,000	1,300	1,000	NS	NS	NS	4,000	2,020
	749 Shad Creek	NS	NS	NS	NS	0	0	475	120	1,500	3,300	5,700	2,300	NS	NS	NS	13,395	5,700 peak
	752 Stockdale Creek	NS	NS	NS	NS	0	0	200	0	300	5,000	4,500	1,800	NS	NS	NS	11,800	5,000 peak
	753 Stockdale Bay	NS	NS	NS	NS	0	0	0	90	300	500	700	NS	NS	NS	NS	1,590	700 peak
	754 Dry Creek	NS	NS	NS	NS	150	400	0	1,800	300	700	400	NS	NS	NS	NS	3,750	2,030
	758 Rocky Bay - Head	NS	NS	NS	NS	0	0	1,000	210	1,400	3,800	9,000	400	NS	NS	NS	15,810	9,000 peak
	759 Rocky Creek	NS	NS	NS	NS	0	0	0	800	2,000	3,300	2,000	1,000	NS	NS	NS	9,100	4,120
	766 Carr Creek	NS	NS	NS	NS	0	0	0	0	0	10	0	0	NS	NS	NS	10	10
	770 Udall Creek	NS	NS	NS	NS	0	0	0	40	0	30	4	5	NS	NS	NS	79	60
	771 McKernan Creek	NS	NS	NS	NS	0	0	0	0	10	20	25	0	NS	NS	NS	55	30
	774 Rosswoog Creek	NS	NS	NS	NS	0	0	0	400	800	610	125	250	NS	NS	NS	2,185	1,110
	775 Pautze Creek	NS	NS	NS	NS	0	0	150	0	250	20	10	0	NS	NS	NS	430	260
	788 Green Creek	NS	NS	NS	NS	0	0	0	7	5,000	1,200	0	NS	NS	NS	NS	6,207	5,000 peak
N. Montague 227-20		0	0	0	0	275	1,020	21,870	14,187	41,000	40,913	49,484	20,620	0	0	0	189,369	94,050
Montague District TOTAL		0	0	0	0	335	1,084	21,870	17,647	47,350	48,595	62,804	26,645	0	0	0	226,330	113,572

-Continued-

Appendix F.5. (Pg 6 of 6)

District	Stream Number & Name	Week Ending Date															Total	Adjusted Total
		6/24	7/01	7/08	7/15	7/22	7/29	8/05	8/12	8/19	8/26	9/02	9/09	9/16	9/23	9/30		
Southeastern	863 Orca Creek	NS	NS	0	200	2,000	3,700	6,000	6,900	5,500	4,600	7,000	1,600	NS	NS	NS	37,500	15,120 peak
	S. Hawkins 228-10	0	0	0	200	2,000	3,700	6,000	6,900	5,500	4,600	7,000	1,600	0	0	0	37,500	15,120
	833 Bates Creek	NS	NS	0	0	0	0	200	0	800	1,200	120	0	NS	NS	NS	2,320	1,200 peak
	834 Hardy Creek	NS	NS	0	0	50	0	12,900	6,200	11,000	6,400	4,700	700	NS	NS	NS	55,500	16,810
	835 Scott Creek	NS	NS	25	125	130	100	10,000	5,800	7,360	5,700	1,200	500	NS	NS	NS	30,940	12,390
	836 Dan's Creek	NS	NS	0	10	50	0	4,700	NS	3,000	2,500	900	25	NS	NS	NS	11,185	6,020
	837 Widgeon Creek	NS	NS	0	0	0	0	400	200	1,500	1,000	100	0	NS	NS	NS	3,200	1,520
	839 Goose Creek	NS	NS	0	0	0	0	700	800	1,000	800	1,200	0	NS	NS	NS	4,500	2,220
	Cutoff 228-20	0	0	25	135	230	100	28,900	13,000	24,660	17,600	8,220	1,225	0	0	0	94,095	40,160
	844 Makaka Creek	NS	NS	25	200	0	200	8,000	4,700	11,500	14,000	13,900	5,000	NS	NS	NS	57,525	23,020
	847 Hawkins Creek	NS	NS	0	0	0	200	16,500	6,600	9,500	12,000	9,500	1,200	NS	NS	NS	55,500	22,320
	849 Rollins Creek	NS	NS	0	0	0	0	500	1,300	2,500	3,500	8,000	600	NS	NS	NS	16,400	8,000 peak
	850 Canoe Creek	NS	NS	50	0	50	0	10,000	2,800	2,000	5,200	4,000	1,000	NS	NS	NS	25,100	10,070
	851 Zillesenoff Creek	NS	NS	0	0	0	0	3,000	1,900	4,000	3,400	7,000	6,500	NS	NS	NS	25,800	12,120
	856 W. Lagoon Creek	NS	NS	0	0	4,500	0	7,400	8,200	5,800	2,000	2,000	NS	NS	NS	NS	29,900	16,140
	857 E. Lagoon Creek	NS	NS	0	1,500	1,350	4,400	2,000	4,800	2,750	1,500	800	1,000	NS	NS	NS	20,100	8,940
	858 N. Lagoon Creek	NS	NS	120	1,500	1,350	4,200	3,000	600	4,250	1,700	400	800	NS	NS	NS	17,920	7,240
	861 Bernard Creek	NS	NS	0	0	0	600	11,000	9,000	10,500	12,300	9,000	2,800	NS	NS	NS	55,200	22,440
	862 Clamdiggers Creek	NS	NS	0	200	150	1,400	4,000	4,500	2,400	900	900	500	NS	NS	NS	14,950	6,100
	N. Hawkins 228-30	0	0	195	3,400	7,400	11,000	58,000	43,600	57,600	60,300	55,500	21,400	0	0	0	318,395	136,390
	827 Captain Creek	NS	NS	0	0	0	0	150	2,600	3,500	4,290	3,500	1,600	NS	NS	NS	15,640	6,350
	828 Cook Creek	NS	NS	0	0	1,400	1,300	32,000	4,500	5,600	11,200	6,100	3,100	NS	NS	NS	65,200	32,000 peak
	829 King Creek	NS	NS	0	0	0	0	50	900	1,300	800	500	500	NS	NS	NS	4,050	1,650
	831 Double Creek	NS	NS	0	0	0	140	4,000	2,100	650	4,100	1,555	300	NS	NS	NS	12,845	5,220
	Double Bay 228-40	0	0	0	0	1,400	1,440	36,200	10,100	11,050	20,390	11,655	5,500	0	0	0	97,735	45,220
	817 Deer Creek	NS	NS	75	0	50	150	2,450	1,500	2,750	2,570	1,020	0	NS	NS	NS	10,565	4,270
	818 Juania Creek	NS	NS	0	0	0	60	1,400	2,700	1,750	1,160	910	800	NS	NS	NS	8,780	3,550
	821 Brown Bear Creek	NS	NS	30	0	80	300	1,900	1,200	3,900	2,300	2,050	600	NS	NS	NS	12,360	4,960
	Johnstone 228-50	0	0	105	0	130	510	5,750	5,400	8,400	6,030	3,980	1,400	0	0	0	31,705	12,780
	805 Port Etches - South Shore	NS	NS	0	NS	0	0	300	0	0	50	0	0	NS	NS	NS	350	320
	806 Dog Salmon Creek	NS	NS	0	NS	0	0	0	180	155	1,600	225	100	NS	NS	NS	2,260	1,600 peak
	807 Beaver Creek	NS	NS	0	NS	0	0	0	0	0	30	0	0	NS	NS	NS	30	30
	810 Garden Creek	NS	NS	0	NS	0	0	450	800	3,500	3,700	3,000	600	NS	NS	NS	12,050	5,090
	811 Etches Creek	NS	NS	0	NS	0	600	0	110	50	800	100	250	NS	NS	NS	1,910	1,120
	812 Nuchek Creek	NS	NS	30	0	50	2,600	8,575	6,400	11,300	11,500	2,450	1,200	NS	NS	NS	44,105	17,660
	815 Constantine Creek	NS	NS	0	0	0	3,000	6,000	9,200	16,700	13,600	11,000	7,500	NS	NS	NS	67,000	28,600
	Etches 228-60	0	0	30	0	50	6,200	15,325	16,690	31,705	31,280	16,775	9,650	0	0	0	127,705	54,420
Southeastern District TOTAL		0	0	355	3,735	11,210	22,950	150,175	95,690	138,915	140,200	103,130	40,775	0	0	0	707,135	304,090
TOTAL OF 8 DISTRICTS		20	0	1,417	15,395	31,725	81,704	431,465	334,707	550,611	619,930	505,999	256,085	112,450	0	0	2,941,508	1,325,852

NS = No Survey.

Appendix F.6. Weekly aerial estimates of the escapement of live chum salmon by statistical area, Prince William Sound, 1990.

Survey Location	Statistical Area	6/23	6/30	7/07	7/14	7/21	Week Ending Date		8/11	8/18	8/25	9/01	9/08	9/15	TOTAL	ADJ. STREAM TOTAL
							7/28	8/04								
Orca Inlet	221-10	0	0	40	35	0	370	100	400	60	650	0	0	ns	1,655	1,120
Simpson/Sheep Bays	221-20	0	6	260	1,840	7,050	970	8,500	4,085	0	0	650	200	0	23,561	10,770
Port Gravina	221-30	750	3,800	10,150	19,410	12,950	11,194	12,800	12,100	5,000	0	1,500	0	0	89,654	37,170
Port Fidalgo	221-40	0	35	2,225	4,150	8,370	3,310	2,900	0	1,000	0	8,030	980	1,100	32,100	17,730
Valdez Arm	221-50	240	4,640	11,765	15,712	20,125	10,650	9,500	40	400	0	2,250	790	300	76,412	34,550
Port Valdez	221-60	0	415	730	4,037	9,360	2,470	30	100	120	670	595	1,220	580	20,327	13,760
Eastern District TOTAL		990	8,896	25,170	45,184	57,855	28,964	33,830	16,725	6,580	1,320	13,025	3,190	1,980	243,709	115,100
Columbia/Long Bays	222-10	0	0	2,045	7,685	6,500	12,900	2,800	1,500	4,000	50	2,350	20	0	39,850	17,170
Wells/Unakwik	222-20	20	1,900	9,532	11,500	1,465	16,650	5,550	3,440	700	1,200	0	95	30	52,082	22,800
Eagle Bay	222-30	ns	0	0	0	14,260	67,700	6,950	0	0	1,900	500	50	0	91,360	72,510
Northern District TOTAL		20	1,900	11,577	19,185	22,225	97,250	15,300	4,940	4,700	3,150	2,850	165	30	183,292	112,480
Unakwik District (229) TOTAL		ns	ns	ns	ns	0	ns	0	0	0	ns	0	ns	ns	0	0
W. Port Wells	223-10	ns	ns	0	1,771	2,510	11,508	4,500	2,713	2,600	1,420	0	60	ns	27,082	15,800
Esther Passage	223-20	ns	ns	0	0	0	0	0	0	0	0	0	0	ns	0	0
E. Port Wells	223-30	ns	ns	0	0	0	5,300	4,500	4,800	2,000	900	40	50	ns	17,590	10,220
Coghill District TOTAL		ns	ns	0	1,771	2,510	16,808	9,000	7,513	4,600	2,320	40	110	ns	44,672	26,020
Passage/Cochrane	224-10	ns	ns	72	1,754	2,300	9,400	5,950	3,850	700	1,300	220	20	ns	25,566	13,760
Culross Pass	224-30	ns	ns	0	0	900	2,400	2,800	0	0	300	0	1,800	ns	8,200	4,780
Port Nellie Juan	224-40	ns	ns	0	10,400	4,900	2,980	4,900	500	0	0	0	1,250	ns	24,930	18,480
Northwestern District TOTAL		ns	ns	72	12,154	8,100	14,780	13,650	4,350	700	1,600	220	3,070	ns	58,696	37,020
Eshamy	225-30	ns	ns	ns	0	0	0	0	0	0	0	0	0	ns	0	0
Eshamy District TOTAL		ns	ns	ns	0	0	0	0	0	0	0	0	0	ns	350	0
Chenega	226-20	ns	ns	ns	0	0	0	0	0	0	0	0	0	ns	0	0
Bainbridge/Lamouche	226-40	ns	ns	ns	80	0	0	0	0	0	0	0	0	ns	80	80
Southwestern District TOTAL		ns	ns	ns	80	0	0	0	0	0	0	0	0	ns	80	80
S. Montague	227-10	ns	ns	ns	ns	0	0	0	200	0	280	0	200	ns	680	630
N. Montague	227-20	ns	ns	ns	ns	0	200	0	110	0	0	0	300	ns	0	420
Montague District TOTAL		ns	ns	ns	ns	0	200	0	310	0	280	0	500	ns	680	1,050
Hawkins Cutoff	228-20	ns	ns	0	25	30	120	0	380	0	0	0	100	ns	655	575
N. Hawkins	228-30	ns	ns	0	0	0	0	0	0	0	0	0	0	ns	0	0
Double Bay	228-40	ns	ns	0	0	0	0	0	130	0	0	0	450	ns	580	550
Johnstone	228-50	ns	ns	5	0	0	0	0	500	0	0	0	50	ns	555	550
Port Etches	228-60	ns	ns	220	1,150	1,082	3,400	3,000	2,400	1,000	0	200	550	ns	13,002	5,600
Southeastern District TOTAL		ns	ns	225	1,175	1,112	3,520	3,000	3,410	1,000	0	200	1,150	ns	14,792	7,275
TOTAL OF 8 DISTRICTS		1,010	10,796	37,044	79,549	91,802	161,522	74,780	37,248	17,580	8,670	16,335	8,185	2,010	546,271	299,025

Appendix F.7. Temporally stratified age and sex composition of the sockeye salmon escapement past the Coghill River weir, 1990.

		Brood Year and Age Group								
		1987	1986		1985		1984		1983	
		0.2	0.3	1.2	1.3	2.2	1.4	2.3	2.4	Total
Stratum Dates: 06/25 - 07/11										
Sampling Dates: 07/05 - 07/06										
Sample Size: 457										
Female	Percent of Sample	0.0	0.7	6.6	42.7	2.0	1.5	1.5	0.0	54.9
	Number in Escapement	0	38	385	2,502	115	90	90	0	3,220
Male	Percent of Sample	0.4	1.1	14.4	23.0	2.8	0.9	2.2	0.2	45.1
	Number in Escapement	26	64	847	1,347	167	51	128	13	2,643
Total	Percent of Sample	0.4	1.8	21.0	65.6	4.8	2.4	3.7	0.2	100.0
	Number in Escapement	26	103	1,232	3,849	282	141	218	13	5,863
	Standard Error	18	36	112	130	59	42	52	13	
Stratum Dates: 07/12 - 07/25										
Sampling Dates: 07/16 - 07/20										
Sample Size: 400										
Female	Percent of Sample	0.3	0.3	9.3	30.0	3.8	1.3	5.3	0.0	50.0
	Number in Escapement	8	8	285	926	116	39	162	0	1,543
Male	Percent of Sample	0.3	0.8	12.5	28.3	3.8	1.3	3.3	0.0	50.0
	Number in Escapement	8	23	386	872	116	39	100	0	1,543
Total	Percent of Sample	0.5	1.0	21.8	58.3	7.5	2.5	8.5	0.0	100.0
	Number in Escapement	15	31	671	1,798	231	77	262	0	3,086
	Standard Error	11	15	64	76	41	24	43	0	
Strata Combined: 06/25 - 07/25										
Sampling Dates: 07/05 - 07/20										
Sample Size: 857										
Female	Percent of Sample	0.1	0.5	7.5	38.3	2.6	1.4	2.8	0.0	53.2
	Number in Escapement	8	46	670	3,428	231	128	252	0	4,763
Male	Percent of Sample	0.4	1.0	13.8	24.8	3.2	1.0	2.6	0.1	46.8
	Number in Escapement	33	87	1,232	2,219	283	90	229	13	4,186
Total	Percent of Sample	0.5	1.5	21.3	63.1	5.7	2.4	5.4	0.1	100.0
	Number in Escapement	41	133	1,903	5,646	514	218	480	13	8,949
	Standard Error	21	39	129	151	71	49	67	13	

Appendix F.8

Temporally stratified age and sex composition of the sockeye salmon escapement past the weir at the head of Eshamy Lagoon, 1990.

		Brood Year and Age Group				
		1986		1985		
		1.2	2.1	1.3	2.2	Total
Stratum dates: 07/05 – 08/05						
Sampling dates: 07/28 – 07/30						
Sample size: 503						
Female	Percent of sample	36.4	0.2	17.7	2.8	57.1
	Number in catch	1,818	10	884	139	2,852
Male	Percent of sample	29.2	0.0	10.7	3.0	42.9
	Number in catch	1,461	0	537	149	2,146
Total	Percent of sample	65.6	0.2	28.4	5.8	100.0
	Number in catch	3,279	10	1,421	288	4,998
	Standard error	106	10	101	52	
Stratum dates: 08/06 – 08/30						
Sampling dates: 08/09 – 08/10						
Sample size: 536						
Female	Percent of sample	34.3	0.0	6.5	3.4	44.2
	Number in catch	3,171	0	603	310	4,084
Male	Percent of sample	42.5	0.0	9.0	3.7	55.2
	Number in catch	3,929	0	827	345	5,100
Total	Percent of sample	77.2	0.0	15.7	7.1	100.0
	Number in catch	7,134	0	1,447	655	9,236
	Standard error	167	0	145	102	
Strata Combined: 07/05 – 08/30						
Sampling dates: 07/28 – 08/10						
Sample size: 1,039						
Female	Percent of sample	35.0	0.1	10.4	3.2	48.7
	Number in catch	4,989	10	1,487	449	6,936
Male	Percent of sample	37.9	0.0	9.6	3.5	50.9
	Number in catch	5,389	0	1,364	494	7,247
Total	Percent of sample	73.2	0.1	20.2	6.6	100.0
	Number in catch	10,413	10	2,868	943	14,234
	Standard error	198	10	177	115	

Appendix F.9. Temporally stratified age and sex composition of the sockeye salmon escapement through the Jackpot River weir, 1990.

		Brood Year and Age Group						
		1986		1985		1984		
		0.3	1.2	1.3	2.2	1.4	2.3	Total
Stratum Dates: 06/29 – 07/13								
Sampling Dates: 07/07 – 07/08								
Sample Size: 331								
Female	Percent of Sample	0.3	4.5	40.2	4.2	0.6	3.0	52.9
	Number in Escapement	5	75	663	70	10	50	872
Male	Percent of Sample	0.0	2.7	38.4	2.7	0.9	2.4	47.1
	Number in Escapement	0	45	633	45	15	40	778
Total	Percent of Sample	0.3	7.3	78.5	6.9	1.5	5.4	100.0
	Number in Escapement	5	120	1,296	115	25	90	1,650
	Standard Error	5	24	37	23	11	21	
Stratum Dates: 07/14 – 07/30								
Sampling Dates: 07/16 – 07/21								
Sample Size: 142								
Female	Percent of Sample	0.0	5.6	32.4	4.2	0.0	4.2	46.5
	Number in Escapement	0	31	180	24	0	24	259
Male	Percent of Sample	0.0	0.7	45.1	1.4	0.7	5.6	53.5
	Number in Escapement	0	4	251	8	4	31	298
Total	Percent of Sample	0.0	6.3	77.5	5.6	0.7	9.9	100.0
	Number in Escapement	0	35	431	31	4	55	557
	Standard Error	0	11	20	11	4	14	
Strata Combined: 06/29 – 07/30								
Sampling Dates: 07/07 – 07/21								
Sample Size: 473								
Female	Percent of Sample	0.2	4.8	38.2	4.2	0.5	3.3	51.3
	Number in Escapement	5	106	843	93	10	73	1,131
Male	Percent of Sample	0.0	2.2	40.1	2.4	0.9	3.2	48.7
	Number in Escapement	0	49	884	53	19	71	1,076
Total	Percent of Sample	0.2	7.0	78.3	6.6	1.3	6.6	100.0
	Number in Escapement	5	155	1,728	146	29	145	2,207
	Standard Error	5	26	42	26	12	25	

Appendix F.10. Estimated age and sex composition of selected sockeye systems in Prince William Sound, 1990.

		Brood Year and Age Group					
		1986		1985		1984	
		0.3	1.2	1.3	2.2	2.3	Total
<hr/>							
Robe Lake *							
Stratum Dates: 07/21 -- 08/04							
Sampling Dates: 07/31							
Sample Size: 44							
Female	Percent of Sample	0.0	9.1	38.6	0.0	6.8	54.5
	Number in Escapement	0	41	174	0	31	245
Male	Percent of Sample	6.8	4.5	29.5	0.0	4.5	45.5
	Number in Escapement	31	20	133	0	20	205
Total	Percent of Sample	6.8	13.6	68.2	0.0	11.4	100.0
	Number in Escapement	31	61	307	0	51	450
	Standard Error	17	24	32	0	22	
<hr/>							
Billy's Hole *							
Stratum Dates: 07/14 -- 09/10							
Sampling Dates: 08/01							
Sample Size: 163							
Female	Percent of Sample	3.1	1.2	46.0	0.6	4.9	55.8
	Number in Escapement	58	23	874	12	93	1,061
Male	Percent of Sample	0.0	3.7	38.7	0.0	1.8	44.2
	Number in Escapement	0	70	734	0	35	839
Total	Percent of Sample	3.1	4.9	84.7	0.6	6.7	100.0
	Number in Escapement	58	93	1,609	12	128	1,900
	Standard Error	26	32	54	12	37	
<hr/>							
Miner's Lake *							
Stratum Dates: 08/04 -- 09/01							
Sampling Dates: 08/02 -- 08/03							
Sample Size: 399							
Female	Percent of Sample	0.0	4.0	44.1	0.5	5.3	53.9
	Number in Escapement	0	104	1,147	13	137	1,401
Male	Percent of Sample	0.0	3.5	35.1	0.3	7.3	46.1
	Number in Escapement	0	91	912	7	189	1,199
Total	Percent of Sample	0.0	7.5	79.2	0.8	12.5	100.0
	Number in Escapement	0	195	2,059	20	326	2,600
	Standard Error	0	34	53	11	43	

* Peak aerial survey counts were used for the escapement estimate.

Appendix F.11. Daily brood stock counts of chum salmon at Wally Noerenberg Hatchery, 1990.

Date	Male			Female			Cumulative Killed
	Used	Unused	Total Killed	Used	Unused	Total Killed	
05-Jul	0	0	0	0	0	0	0
06-Jul	0	0	0	0	0	0	0
07-Jul	277	66	343	416	35	451	794
08-Jul	296	56	352	439	23	462	1,608
09-Jul	501	150	651	738	46	784	3,043
10-Jul	528	136	664	850	92	942	4,649
11-Jul	684	236	920	1,012	102	1,114	6,683
12-Jul	405	233	638	583	61	644	7,965
13-Jul	408	544	952	588	55	643	9,560
14-Jul	0	0	0	0	0	0	9,560
15-Jul	818	359	1,177	1,262	115	1,377	12,114
16-Jul	693	407	1,100	1,009	136	1,145	14,359
17-Jul	583	1,772	2,355	839	162	1,001	17,715
18-Jul	495	1,396	1,891	697	99	796	20,402
19-Jul	684	1,541	2,225	1,039	146	1,185	23,812
20-Jul	730	897	1,627	1,039	160	1,199	26,638
21-Jul	731	512	1,243	1,177	175	1,352	29,233
22-Jul	703	310	1,013	1,012	140	1,152	31,398
23-Jul	844	321	1,165	1,237	218	1,455	34,018
24-Jul	782	267	1,049	1,118	138	1,256	36,323
25-Jul	424	192	616	605	81	686	37,625
26-Jul	1,266	817	2,083	1,408	418	1,826	41,534
27-Jul	891	633	1,524	1,283	365	1,648	44,706
28-Jul	1,014	260	1,274	1,572	303	1,875	47,855
29-Jul	856	371	1,227	1,280	252	1,532	50,614
30-Jul	778	429	1,207	1,366	354	1,720	53,541
31-Jul	1,144	421	1,565	1,908	390	2,298	57,404
01-Aug	685	414	1,099	1,416	275	1,691	60,194
02-Aug	671	363	1,034	1,045	232	1,277	62,505
03-Aug	599	406	1,005	1,387	318	1,705	65,215
04-Aug	697	397	1,094	1,808	368	2,176	68,485
05-Aug	402	395	797	616	238	854	70,136
06-Aug	564	442	1,006	999	350	1,349	72,491
07-Aug	256	345	601	474	246	720	73,812
08-Aug	151	148	299	314	104	418	74,529
09-Aug	144	250	394	283	109	392	75,315
10-Aug	189	197	386	432	85	517	76,218
11-Aug	69	91	160	124	37	161	76,539
12-Aug	174	164	338	268	98	366	77,243
13-Aug	43	85	128	110	54	164	77,535

Appendix F.12 Estimated age and sex composition of chinook salmon in the Wally Noerenberg Hatchery brood stock, 1990.

		Brood Year and Age Group ^a				
		1987	1986	1985	1984	
		1.1	1.2	1.3	1.4	Total
Sampling Dates: 7/23, 8/4, 8/10, 8/15						
Female	Sample Size	2	39	57	10	108
	Percent of Sample	0.9	18.2	26.6	4.7	50.5
Male	Sample Size	29	24	39	14	106
	Percent of Sample	13.6	11.2	18.2	6.5	49.5
Total	Sample Size	31	63	96	24	214
	Percent of Sample	14.5	29.4	44.9	11.2	100.0
	Standard Error	2.4	3.1	3.4	2.2	

^a Freshwater ages assumed.

Appendix F.13. Temporally stratified age and sex composition of chum salmon brood stock at Wally Noerenberg Hatchery, 1990.

		Brood Year and Age Group				
		1987	1986	1985	1984	
		0.2	0.3	0.4	0.5	Total
<hr/>						
Sampling Dates: 07/13 – 07/16						
Female	Sample Size	0	69	97	0	166
	Percent of Sample	0.0	22.0	31.0	0.0	53.0
Male	Sample Size	0	53	94	0	147
	Percent of Sample	0.0	16.9	30.0	0.0	47.0
Total	Sample Size	0	122	191	0	313
	Percent of Sample	0.0	39.0	61.0	0.0	100.0
	Standard Error	0	2.8	2.8	0	
<hr/>						
Sampling Dates: 07/28 – 07/30						
Female	Sample Size	0	100	112	1	213
	Percent of Sample	0.0	29.8	33.3	0.3	63.4
Male	Sample Size	0	45	77	1	123
	Percent of Sample	0.0	13.4	22.9	0.3	36.6
Total	Sample Size	0	145	189	2	336
	Percent of Sample	0.0	43.2	56.3	0.6	100.0
	Standard Error	0	2.7	2.7	0.4	
<hr/>						
Sampling Dates: 08/08 – 08/09						
Female	Sample Size	2	140	101	3	246
	Percent of Sample	0.6	39.8	28.7	0.9	69.9
Male	Sample Size	1	56	49	0	106
	Percent of Sample	0.3	15.9	13.9	0.0	30.1
Total	Sample Size	3	196	150	3	352
	Percent of Sample	0.9	55.7	42.6	0.9	100.0
	Standard Error	0.5	2.7	2.6	0.5	

APPENDIX G: MEAN LENGTH BY SEX AND AGE OF SALMON IN THE COMMERCIAL COMMON PROPERTY CATCHES AND ESCAPEMENTS OF THE COPPER/BERING RIVERS AND PRINCE WILLIAM SOUND

Appendix G.1. Mean length by sex and age of sockeye salmon from the commercial common property drift gillnet catches in the Copper River District, 1990.

		Brood Year and Age Group									
		1987		1986		1985			1984		1983
		0.2	1.1	0.3	1.2	0.4	1.3	2.2	1.4	2.3	2.4
Sample Date: 5/15											
Females	Mean Length (mm)			552	549		552	493	550	538	549
	Std. Error			4.0	0.0		3.0	7.5	0.0	3.7	3.0
	Sample Size			40	1		69	2	1	71	2
Males	Mean Length (mm)			577	507	622	579	485	589	571	
	Std. Error			2.8	0.0	10.0	2.5	70.5	22.7	4.5	
	Sample Size			42	1	2	74	2	3	52	
Sample Date: 5/22											
Females	Mean Length (mm)			548	488		547	505		540	
	Std. Error			2.0	12.4		2.4	8.7		3.4	
	Sample Size			91	7		100	4		71	
Males	Mean Length (mm)			570	503		570			573	
	Std. Error			2.3	11.6		3.0			4.0	
	Sample Size			94	5		119			44	
Sample Date: 5/30											
Females	Mean Length (mm)			545	510	541	560			555	
	Std. Error			6.2	14.9	0.0	3.9			4.1	
	Sample Size			13	3	1	48			27	
Males	Mean Length (mm)			581	532		585	512		579	
	Std. Error			4.2	13.6		7.3	11.0		8.3	
	Sample Size			19	4		28	2		22	
Sample Date: 6/05											
Females	Mean Length (mm)			566	498		563	499	583	555	473
	Std. Error			6.4	37.1		3.7	37.1	27.3	6.4	0.0
	Sample Size			12	3		42	3	3	23	1
Males	Mean Length (mm)			580	527		577	472	584	549	
	Std. Error			6.9	7.1		5.2	9.6	18.5	8.8	
	Sample Size			14	10		41	4	2	13	

-Continued-

Appendix G.1. (page 2 of 2)

		Brood Year and Age Group									
		1987		1986		1985			1984		1983
		0.2	1.1	0.3	1.2	0.4	1.3	2.2	1.4	2.3	2.4
Sample Date: 6/12											
Females	Mean Length (mm)			553	505		558	479		555	
	Std. Error			3.8	10.3		2.7	3.5		3.7	
	Sample Size			21	9		96	3		27	
Males	Mean Length (mm)	443		590	499		580	478	436	565	610
	Std. Error	0.0		7.3	8.6		3.2	16.3	0.0	7.2	0.0
	Sample Size	1		12	27		110	8	1	16	1
Sample Date: 6/23											
Females	Mean Length (mm)			569	511		556	574	628	549	
	Std. Error			10.6	7.6		3.5	0.0	0.0	1.5	
	Sample Size			11	14		57	1	1	2	
Males	Mean Length (mm)	488	305	581	495		583	506	630	547	
	Std. Error	0.0	0.0	6.8	7.4		4.1	30.0	0.0	18.0	
	Sample Size	1	1	7	20		56	2	1	2	
Sample Date: 7/14											
Females	Mean Length (mm)	535		578	511		568	497		568	
	Std. Error	15.0		15.6	5.2		4.1	5.5		6.4	
	Sample Size	2		6	24		48	2		4	
Males	Mean Length (mm)	483		590	497		602	510	612	620	
	Std. Error	0.0		4.9	13.1		3.4	50.0	0.0	5.1	
	Sample Size	1		8	17		54	2	1	4	
Sample Date: 7/28											
Females	Mean Length (mm)			570	498		573	521		583	
	Std. Error			6.2	6.1		4.4	27.5		7.5	
	Sample Size			9	23		53	3		2	
Males	Mean Length (mm)	533		603	481		589	619		603	
	Std. Error	1.0		9.5	19.8		5.2	0.0		15.9	
	Sample Size	2		4	13		47	1		3	

Appendix G.2. Mean length by sex and age of sockeye salmon from the commercial common property drift gillnet catches in the Bering River District, 1990.

		Brood Year and Age Group					
		1987	1986		1985	1984	
		0.2	0.3	1.2	1.3	1.4	2.3
Sample Date: 6/19							
Females	Mean Length (mm)	426	551	496	559	550	561
	Std. Error	0.0	7.3	5.3	4.0	26.5	37.5
	Sample Size	1	10	26	40	2	2
Males	Mean Length (mm)	439	591	485	560	543	
	Std. Error	0.0	5.8	6.8	7.8	0.0	
	Sample Size	1	7	46	28	1	

Appendix G.3. Mean length by sex and age of chinook salmon from the commercial common property drift gillnet catches in the Copper River District, 1990.

		Brood Year and Age Group												
		1987		1986		1985		1984			1983			1982
		0.2	1.1	1.2	2.1	1.3	2.2	1.4	2.3	3.2	1.5	2.4	3.3	2.5
Sample Date: 5/15														
Females	Mean Length (mm)					803		902	820			872		
	Std. Error					11.1		4.0	12.4			7.7		
	Sample Size					33		172	5			28		
Males	Mean Length (mm)			569		817		964	740		1,035	942		1,012
	Std. Error			18.5		29.1		5.7	64.5		19.1	9.4		49.0
	Sample Size			7		14		126	3		5	23		2
Sample Date: 5/26														
Females	Mean Length (mm)			861		837		917				891		
	Std. Error			61.5		8.5		7.9				14.8		
	Sample Size			2		29		60				10		
Males	Mean Length (mm)			694		785	609	913	871		1,056	927		
	Std. Error			64.3		22.8	0.0	20.3	8.5		55.5	37.3		
	Sample Size			9		18	1	35	2		2	6		
Sample Dates: 6/01 - 6/02														
Females	Mean Length (mm)		537	806		796	578	890	923		946	881	820	
	Std. Error		0.0	178.0		15.3	57.5	10.8	0.0		0.0	21.9	0.0	
	Sample Size		1	2		31	2	41	1		1	6	1	
Males	Mean Length (mm)	519	495	568		800	594	931	812	550	1,045	799	1,025	
	Std. Error	15.2	1.5	13.0		18.2	18.9	19.5	13.5	0.0	25.9	96.2	0.0	
	Sample Size	3	2	17		36	6	32	2	1	4	5	1	
Sample Dates: 6/18 - 6/19														
Females	Mean Length (mm)			631		830		906	809	659	968	923		
	Std. Error			30.1		14.7		11.0	81.0	19.0	0.0	22.8		
	Sample Size			7		29		34	2	2	1	8		
Males	Mean Length (mm)	410	614	509		859	613	985	887		1,065	957		
	Std. Error	0.0	49.7	38.5		17.6	2.5	7.3	21.5		25.1	7.5		
	Sample Size	1	11	2		27	2	50	2		4	2		

Appendix G.4. Mean length by sex and age of coho salmon from the commercial common property drift gillnet catches in the Copper River District, 1990.

		Brood Year and Age Group		
		1987	1986	1985
		1.1	2.1	3.1
Sample Date: 8/29				
Females	Mean Length	649	656	649
	Std. Error	6.2	4.8	18.8
	Sample Size	24	57	3
Males	Mean Length	622	655	688
	Std. Error	8.8	6.5	13.5
	Sample Size	44	57	2

Appendix G.5. Mean length by sex and age of coho salmon from the commercial common property drift gillnet catches in the Bering River District, 1990.

		Brood Year and Age Group		
		1987	1986	1985
		1.1	2.1	3.1
Sample Date: 8/30				
Females	Mean Length (mm)	642	638	667
	Std. Error	7.6	6.7	13.0
	Sample Size	15	37	5
Males	Mean Length (mm)	610	637	638
	Std. Error	8.3	7.8	12.7
	Sample Size	42	68	5
Sample Date: 9/21				
Females	Mean Length (mm)	643	653	667
	Std. Error	5.4	3.5	18.4
	Sample Size	23	76	4
Males	Mean Length (mm)	648	662	531
	Std. Error	5.9	8.3	101.6
	Sample Size	21	55	3

Appendix G.6. Mean length by sex and age of sockeye salmon in the personal use and subsistence, dip net and fish wheel catches of the upper Copper River near Chitina, 1990.

		Brood Year and Age Group											
		1987		1986			1985		1984			1983	
		0.2	1.1	0.3	1.2	2.1	1.3	2.2	1.4	2.3	3.2	2.4	3.3
Dip net catch													
Sample Dates: 6/02 – 8/12													
Females	Mean Length (mm)	517	479	537	518	308	561	499	565	543			503
	Std. Error	16.8	33.8	4.1	2.8	0.0	2.1	6.7	7.9	3.8			14.1
	Sample Size	13	7	74	273	1	363	50	4	98			3
Males	Mean Length (mm)	569	512	568	567	526	577	545		561		567	595
	Std. Error	10.0	26.1	3.9	3.1	86.0	2.2	9.9		4.9		26.0	0.0
	Sample Size	20	8	81	230	2	306	36		83		2	1
Fish wheel catch													
Sample Dates: 6/08 – 7/22													
Females	Mean Length (mm)	486		552	507	469	541	476		529	480		
	Std. Error	23.9		8.4	5.1	0.0	5.0	7.9		10.7	0.0		
	Sample Size	7		14	68	1	56	35		16	1		
Males	Mean Length (mm)	496	517	558	540	472	563	553		541		590	
	Std. Error	36.4	0.0	13.0	9.6	0.0	6.0	18.3		17.2		0.0	
	Sample Size	3	1	8	39	1	37	9		9		1	

Appendix G.7. Mean length by sex and age of chinook salmon from sport catches in the upper Copper River, 1990.

		Brood Year and Age Group			
		1986	1985	1984	1983
		1.2	1.3	1.4	1.5
Gulkana River					
Sampling Dates: 06/29–07/13					
Sample Size: 55					
Female	Mean Length (mm)		875	853	
	Std. Error		19.0	17.3	
	Sample Size		20	9	
Male	Mean Length (mm)		946	924	
	Std. Error		36.0	17.2	
	Sample Size		9	14	
Klutina River					
Sampling Dates: 07/11–07/29					
Sample Size: 95					
Female	Mean Length (mm)	879	941	860	
	Std. Error	14.0	8.0	0.0	
	Sample Size	19	37	1	
Male	Mean Length (mm)	879	986		1,025
	Std. Error	31.0	11.0		5.0
	Sample Size	15	21		2

Appendix G.8. Mean length by sex and age of sockeye salmon escapements to the Copper River delta, 1990.

		Brood Year and Age Group												
		1988		1987		1986			1985			1984		1983
		0.1	0.2	1.1	0.3	1.2	2.1	0.4	1.3	2.2	1.4	2.3	1.5	
Eyak Lake – South Beaches														
Sample Dates: 7/18 – 8/07														
Females	Mean Length (mm)		499		542	483			546	560		540		
	Std. Error		14.3		4.0	9.3			1.9	0.0		5.8		
	Sample Size		3		21	18			121	1		15		
Males	Mean Length (mm)		462		571	451			572	478		563		
	Std. Error		7.3		13.3	3.0			4.2	16.9		18.3		
	Sample Size		27		5	173			37	9		4		
Eyak Lake – Middle Arm														
Sample Dates: 6/18 – 8/27														
Females	Mean Length (mm)		493		549	493			558	493	543	548		
	Std. Error		9.7		5.7	5.1			2.0	21.2	6.0	5.5		
	Sample Size		5		27	49			163	5	3	16		
Males	Mean Length (mm)		429	364	593	440			586	438	546	563		
	Std. Error		9.9	37.2	3.2	2.4			2.8	4.0	0.0	14.1		
	Sample-Size		16	5	34	223			233	33	1	18		
Eyak Lake – Hatchery Creek														
Sample Date: 6/25														
Females	Mean Length (mm)				597	564			550			577		
	Std. Error				0.0	8.1			19.9			0.0		
	Sample Size				1	5			4			1		
Males	Mean Length (mm)					438			557	453		607		
	Std. Error					11.2			50.4	0.0		0.0		
	Sample Size					3			4	1		1		
McKinley Lake – Salmon Creek delta														
Sample Dates: 7/10 – 7/25														
Females	Mean Length (mm)		453	447	568	496			569		632	562		
	Std. Error		23.8	25.9	4.4	6.6			2.8		0.0	10.6		
	Sample Size		3	3	19	45			77		1	5		
Males	Mean Length (mm)		440	317	587	445			571	441	660	561		
	Std. Error		9.7	0.0	28.3	2.2			11.1	7.7	0.0	59.0		
	Sample Size		27	1	7	278			34	13	1	2		

–Continued–

Appendix G.8. (Page 2 of 3)

		Brood Year and Age Group												
		1988		1987		1986			1985			1984		1983
		0.1	0.2	1.1	0.3	1.2	2.1	0.4	1.3	2.2	1.4	2.3	1.5	
Twenty-Seven Mile Slough – Confluence with Copper River														
Sample Date: 6/26														
Females	Mean Length (mm)		550		562	524		565	556		564	555		
	Std. Error		7.8		2.8	7.2		2.8	11.5		17.6	12.8		
	Sample Size		14		39	47		93	3		3	4		
Males	Mean Length (mm)		423	415	455	436		455	456					
	Std. Error		3.6	15.2	19.4	2.0		12.7	9.1					
	Sample Size		75	5	13	168		20	9					
Thirty-Nine Mile Creek														
Sample Dates: 7/09 – 8/28														
Females	Mean Length (mm)		533		572	492		570	448			581		
	Std. Error		32.5		3.8	8.7		1.9	0.0			14.1		
	Sample Size		3		30	28		229	1			8		
Males	Mean Length (mm)		473	322	608	469		593	494			609		
	Std. Error		18.6	6.4	6.5	5.0		3.7	16.8			7.5		
	Sample Size		16	6	22	140		172	13			12		
Pleasant Creek – Confluence with Martin River														
Sample Dates: 7/02 – 7/03														
Females	Mean Length (mm)		564		574	479		570	568	498	559		540	
	Std. Error		6.5		3.0	5.6		0.0	2.4	0.0	9.0		0.0	
	Sample Size		3		65	55		1	129	1	2		1	
Males	Mean Length (mm)		447	317	590	469	416		592	432		572		
	Std. Error		12.8	0.0	6.2	6.3	0.0		5.5	18.9		0.0		
	Sample Size		27	1	25	64	1		54	3		1		
Ragged Point River – Confluence with Martin River														
Sample Dates: 7/17														
Females	Mean Length (mm)		517		568	491		566	488		539	569		
	Std. Error		13.3		3.4	3.1		1.8	6.2		28.0	4.8		
	Sample Size		10		45	94		162	18		2	21		
Males	Mean Length (mm)		444	372	594	439		576	430			568		
	Std. Error		11.6	54.1	5.8	2.5		4.2	8.3			9.8		
	Sample Size		27	3	29	144		96	21			15		

–Continued–

Appendix G.8. (Page 3 of 3)

		Brood Year and Age Group											
		1988	1987		1986			1985			1984		1983
		0.1	0.2	1.1	0.3	1.2	2.1	0.4	1.3	2.2	1.4	2.3	1.5
Martin Lake – West shore and outlet													
Sample Dates: 7/16 – 7/18													
Females	Mean Length (mm)		494		557	472		554	476		548		
	Std. Error		12.4		5.8	2.4		2.5	6.0		10.2		
	Sample Size		6		17	100		108	15		8		
Males	Mean Length (mm)	341	422	321	592	423		578	430		535		
	Std. Error	23.1	3.7	3.5	11.5	1.8		12.1	5.8		32.0		
	Sample Size	5	35	40	10	214		20	36		3		
Little Martin Lake													
Sample Dates: 7/20 – 7/21													
Females	Mean Length (mm)		488		553	462		547					
	Std. Error		0.0		11.8	2.8		2.7					
	Sample Size		1		6	50		69					
Males	Mean Length (mm)	307	401	317	594	427		580	408				
	Std. Error	2.0	8.6	2.6	11.9	1.4		2.0	0.0				
	Sample Size	2	6	20	3	214		116	1				
Tokun Lake													
Sample Dates: 7/22 – 7/23													
Females	Mean Length (mm)		499		568	494		565	483		574		
	Std. Error		36.0		2.7	4.4		1.6	14.4		12.8		
	Sample Size		4		30	46		148	3		3		
Males	Mean Length (mm)		513	304	593	451		660	597	479	592	538	
	Std. Error		57.8	0.0	3.7	3.6		0.0	2.8	33.5	16.1	0.0	
	Sample Size		3	1	28	95		1	112	2	4	1	
Martin River Slough													
Sample Dates: 6/21 – 6/22													
Females	Mean Length (mm)		549		552	505		550	472		553	529	
	Std. Error		6.4		2.3	15.2		2.4	0.0		0.0	18.7	
	Sample Size		3		70	5		158	1		1	4	
Males	Mean Length (mm)		457	396	577	443	433	577	415			556	
	Std. Error		11.2	53.6	5.1	5.4	5.0	2.9	7.6			15.5	
	Sample Size		27	4	63	59	2	141	3			2	

Appendix G.9. Mean length by sex and age of sockeye salmon escapements to the Bering River, 1990.

		Brood Year and Age Group									
		1988		1987		1986		1985		1984	
		0.1		0.2	1.1	0.3	1.2	0.4	1.3	1.4	2.3
Bering Lake--Dick Creek											
Sample Dates: 7/11 - 7/12											
Females	Mean Length (mm)			492		551	497		557		
	Std. Error			17.8		3.2	3.6		2.1		
	Sample Size			5		52	71		100		
Males	Mean Length (mm)	384		442	407	578	435		540		
	Std. Error	0.0		12.2	11.6	6.6	1.7		3.7		
	Sample Size	1		14	5	24	162		130		
Kushtaka Lake											
Sample Dates: 8/12 - 14											
Females	Mean Length (mm)			454		524	445		520	577	
	Std. Error			11.0		8.1	2.2		2.5	2.1	
	Sample Size			2		6	90		76	6	
Males	Mean Length (mm)			442			446	605	540		
	Std. Error			12.1			2.3	0.0	4.4		
	Sample Size			7			149	1	41		
Clear Creek--Kushtaka drainage											
Sample Date: 8/13											
Females	Mean Length (mm)					541	482		544	556	
	Std. Error					2.5	3.9		3.7	12.2	
	Sample Size					2	5		28	6	
Males	Mean Length (mm)			454			425		586	574	
	Std. Error			0.0			4.9		6.9	14.6	
	Sample Size			1			7		22	4	

Appendix G.10. Mean length by sex and age of chinook salmon carcass samples from five upper Copper River escapements by location, 1990.

		Brood Year and Age Group			
		1986	1985	1984	1983
		1.2	1.3	1.4	1.5
Gulkana River					
Sampling Dates: 08/24–08/29					
Sample Size: 119					
Female	Mean Length (mm)	830	795	853	
	Std. Error	0.0	7.7	17.3	
	Sample Size	1	44	9	
Male	Mean Length (mm)	770	859	924	910
	Std. Error	0.0	11.3	17.2	0.0
	Sample Size	1	39	14	1
Little Tonsina River					
Sampling Dates: 08/09–08/10					
Sample Size: 32					
Female	Mean Length (mm)		852	855	
	Std. Error		26.0	9.0	
	Sample Size		5	12	
Male	Mean Length (mm)		899	957	
	Std. Error		38.0	17.0	
	Sample Size		4	11	
East Fork – Christochina River					
Sampling Dates: 08/01–08/03					
Sample Size: 30					
Female	Mean Length (mm)		779	856	
	Std. Error		11.0	15.0	
	Sample Size		8	12	
Male	Mean Length (mm)		815	920	
	Std. Error		66.0	14.0	
	Sample Size		4	6	

– Continued –

Brood Year and Age Group				
	1986	1985	1984	1983
	1.2	1.3	1.4	1.5

Kiana Creek

Sampling Dates: 08/14–08/16
Sample Size: 42

Female	Mean Length (mm)	830	879
	Std. Error	41.0	12.0
	Sample Size	4	15
Male	Mean Length (mm)	903	938
	Std. Error	36.0	16.0
	Sample Size	9	14

Mendeltna Creek

Sampling Date: 08/21
Sample Size: 2

Female	Mean Length (mm)	830
	Std. Error	80.0
	Sample Size	2
Male	Mean Length (mm)	
	Std. Error	
	Sample Size	

Appendix G.11. Mean length (mm) of pink salmon sampled from commercial common property and hatchery cost recovery catches in Prince William Sound, 1990.

Statistical Week	Dates	Purse Seine Fisheries							
		Eastern District		Northern District		Coghill District		Southwestern District	
		CPH ^a	HCR ^b	CPH	HCR	CPH	HCR	CPH	HCR
26	06/23 – 06/29	461	477						
27	06/30 – 07/06	463	468						
28	07/07 – 07/13	473							
29	07/14 – 07/20	472							
30	07/21 – 07/27	477					448	453	452
31	07/28 – 08/03	467		460			456	467	
32	08/04 – 08/10	481		488	470	483		490	
33	08/11 – 08/17				493	489		494	
34	08/18 – 08/24					501	501		
35	08/25 – 08/31							502	

^a Commercial Common Property Harvest

^b Hatchery Cost Recovery

Appendix G.12. Mean length by sex and age of chum salmon from commercial common property purse seine catches in the Eastern District, 1990.

		Brood Year and Age Group		
		1986	1985	1984
		0.3	0.4	0.5
Sample Date: 6/29				
Females	Mean Length (mm)	625	648	798
	Std. Error	6.6	3.8	0.0
	Sample Size	40	80	1
Males	Mean Length (mm)	642	670	
	Std. Error	9.7	4.6	
	Sample Size	13	49	

Appendix G.13. Mean length by sex and age of chum salmon from the commercial common property purse seine and drift gillnet catches in the Coghill District, 1990.

		Brood Year and Age Group				
		1987	1986	1985	1984	1983
		0.2	0.3	0.4	0.5	0.6
<hr/>						
Sample Date:	6/23					
Females	Mean Length (mm)		625	643	674	
	Std. Error		3.6	4.1	13.5	
	Sample Size		63	70	4	
Males	Mean Length (mm)	584	632	682		
	Std. Error	0.0	9.4	4.3		
	Sample Size	1	13	38		
<hr/>						
Sample Dates:	6/26 – 6/27					
Females	Mean Length (mm)	552	607	646	651	
	Std. Error	0.0	4.0	4.2	20.5	
	Sample Size	1	73	79	2	
Males	Mean Length (mm)		627	668		
	Std. Error		7.6	7.1		
	Sample Size		7	20		
<hr/>						
Sample Dates:	7/03 – 7/04					
Females	Mean Length (mm)	564	595	643		732
	Std. Error	0.0	3.8	6.0		0.0
	Sample Size	1	66	34		1
Males	Mean Length (mm)		623	665		
	Std. Error		6.7	5.7		
	Sample Size		41	33		
<hr/>						

Appendix G.14. Mean length by sex and age of chum salmon from the commercial common property gillnet catches in the Eshamy District, 1990.

		Brood Year and Age Group			
		1987	1986	1985	1984
		0.2	0.3	0.4	0.5
<hr/>					
Sample Date:	6/13				
Females	Mean Length (mm)		621	651	678
	Std. Error		3.2	3.7	17.5
	Sample Size		95	53	2
Males	Mean Length (mm)		627	692	
	Std. Error		7.2	7.1	
	Sample Size		40	17	
<hr/>					
Sample Dates:	6/20 - 6/21				
Females	Mean Length (mm)	596	608	626	638
	Std. Error	29.5	4.0	4.9	22.0
	Sample Size	2	67	65	2
Males	Mean Length (mm)		621	672	677
	Std. Error		4.3	7.0	31.0
	Sample Size		30	20	2
<hr/>					
Sample Dates:	6/28 - 6/29				
Females	Mean Length (mm)	569	602	641	
	Std. Error	0.0	3.0	5.0	
	Sample Size	1	90	30	
Males	Mean Length (mm)		619	664	
	Std. Error		4.8	8.2	
	Sample Size		46	18	
<hr/>					
Sample Date:	7/07				
Females	Mean Length (mm)		602	641	695
	Std. Error		4.9	6.8	0.0
	Sample Size		34	10	1
Males	Mean Length (mm)		642	682	
	Std. Error		15.4	0.0	
	Sample Size		10	1	
<hr/>					
Sample Date:	7/14				
Females	Mean Length (mm)		599	634	656
	Std. Error		2.9	7.8	0.0
	Sample Size		109	26	1
Males	Mean Length (mm)		610	673	675
	Std. Error		6.0	6.1	0.0
	Sample Size		28	18	1

Appendix G.15. Mean length by sex and age of sockeye salmon in sampled escapements to Prince William Sound, 1990.

		Brood Year and Age Group								
		1987	1986			1985		1984		1983
		0.2	0.3	1.2	2.1	1.3	2.2	1.4	2.3	2.4
Coghill Weir										
Sample Dates:		06/25 – 7/20								
Females	Mean Length (mm)	452	538	493*		554	492	563	569	
	Std. Error	0.0	9.3	3.8		1.9	6.0	7.5	5.0	
	Sample Size	1	4	67		315	24	12	28	
Males	Mean Length (mm)	456	549	468		569	486	575	578	591
	Std. Error	37.2	21.2	6.0		3.5	10.2	22.9	5.3	0.0
	Sample Size	3	8	116		218	28	9	23	1
Eshamy Weir										
Sample Dates:		07/28 – 08/10								
Females	Mean Length (mm)			562	554	610	565			
	Std. Error			1.8	0.0	2.7	4.0			
	Sample Size			367	1	124	32			
Males	Mean Length (mm)			589		642	588			
	Std. Error			1.8		3.4	6.0			
	Sample Size			375		102	35			
Jackpot Weir										
Sample Dates:		07/07 – 07/21								
Females	Mean Length (mm)		604	505		577	521	508	566	
	Std. Error		0.0	6.4		2.2	9.5	9.0	7.9	
	Sample Size		1	23		179	20	2	16	
Males	Mean Length (mm)			547		606	537	629	594	
	Std. Error			13.2		2.7	13.6	28.1	11.5	
	Sample Size			10		188	11	4	16	

– Continued –

Appendix G.15. (Pg. 2 of 2)

		Brood Year and Age Group								
		1987	1986			1985		1984		1983
		0.2	0.3	1.2	2.1	1.3	2.2	1.4	2.3	2.4
Robe Lake										
Sample Dates:		07/31								
Females	Mean Length (mm)			471		556			528	
	Std. Error			9.1		5.0			8.9	
	Sample Size			4		17			3	
Males	Mean Length (mm)		586	498		572			542	
	Std. Error		9.1	16.5		7.7			10.5	
	Sample Size		3	2		13			2	
Billy's Hole										
Sample Dates:		08/01								
Females	Mean Length (mm)		558	478		568	500		560	
	Std. Error		11.9	11.0		3.2	0.0		5.3	
	Sample Size		5	2		75	1		8	
Males	Mean Length (mm)			481		597			590	
	Std. Error			14.6		3.3			20.9	
	Sample Size			6		63			3	
Miner's Lake										
Sample Dates:		08/02								
Females	Mean Length (mm)			480		559	489		560	
	Std. Error			5.5		1.7	6.0		5.3	
	Sample Size			16		176	2		21	
Males	Mean Length (mm)			449		585	510		590	
	Std. Error			9.0		2.1	0.0		5.0	
	Sample Size			14		140	1		29	

Appendix G.16. Mean length by sex and age of chinook salmon from the Wally Noerenberg Hatchery brood stock, 1990.

		Brood Year and Age Group				
		1987	1986		1985	1984
		1.1	1.2	2.1	1.3	1.4
Sample Dates:		7/23 – 8/20				
Females	Mean Length (mm)	593	734		737	848
	Std. Error	167.5	5.7		6.6	22.5
	Sample Size	2	38		57	10
Males	Mean Length (mm)	466	678	442	730	842
	Std. Error	5.3	21.0	0.0	5.3	31.8
	Sample Size	28	24	1	39	14

Appendix G.17. Mean length by sex and age of chum salmon from the Wally Noerenberg Hatchery brood stock, 1990.

		Brood Year and Age Group			
		1987	1986	1985	1984
		0.2	0.3	0.4	0.5
Sample Dates:	7/13 – 7/16				
Females	Mean Length (mm)		638	658	
	Std. Error		4.7	3.4	
	Sample Size		69	97	
Males	Mean Length (mm)		636	685	
	Std. Error		6.1	4.2	
	Sample Size		53	94	
Sample Dates:	7/28 – 7/30				
Females	Mean Length (mm)		617	651	640
	Std. Error		3.4	2.8	0.0
	Sample Size		100	112	1
Males	Mean Length (mm)		638	670	660
	Std. Error		6.0	4.1	0.0
	Sample Size		45	77	1
Sample Dates:	8/08 – 8/09				
Females	Mean Length (mm)	575	607	646	647
	Std. Error	25.0	2.9	2.9	14.5
	Sample Size	2	140	101	3
Males	Mean Length (mm)	580	610	660	
	Std. Error	0.0	4.8	5.2	
	Sample Size	1	56	49	

APPENDIX H: AVERAGE WEIGHTS OF SALMON IN THE COPPER/BERING RIVERS AND PRINCE WILLIAM SOUND
COMMERCIAL COMMON PROPERTY AND HATCHERY COST RECOVERY HARVESTS

Appendix H.1. Average salmon weights from the commercial gillnet and purse seine fisheries in the Copper/Bering and Prince William Sound areas, 1990.

Area/Gear	District or Hatchery Name	Location Code	Average Weight (kg) ^a				
			Sockeye	Chinook	Coho	Pink	Chum
Copper/Bering River Area							
Drift Gillnet	Copper River	212	2.77	11.77	4.21	1.86	3.77
	Bering River	200	2.63	11.61	4.22	1.81	4.54
Educational Permit ^b	Copper/Bering	200/212	2.91	11.86	4.26	1.38	4.45
Prince William Sound Area							
Drift Gillnet	Coghill	223	3.15	6.49	4.00	1.44	4.07
	Eshamy	225	2.98	6.66	3.76	1.55	4.18
	Unakwik	229	2.94	4.08	3.35	1.37	3.63
Set Gillnet	Eshamy	225	2.80	5.85	3.53	1.51	4.35
Purse Seine	Eastern	221	3.00	6.84	4.00	1.31	4.40
	Northern	222	3.02	3.74	3.79	1.35	4.06
	Coghill	223	2.89	3.85	3.98	1.37	4.38
	Northwestern	224	3.19	4.54	3.91	1.36	4.28
	Southwestern	226	2.98	6.46	3.90	1.37	4.00
	Montague	227			3.95	1.36	4.54
	Southeastern	228	3.88		2.04	1.34	3.62
	Unakwik	229					
Hatchery Cost Recovery Harvest ^c	Solomon Gulch	221-61	3.63	1.13	3.80	1.20	3.99
	Cannery Creek	222-21				1.35	
	Wally Noerenberg	223-41	3.38		3.53	1.37	3.99
	Armin F. Koernig	226-62	3.31		3.70	1.37	3.92
	Main Bay	225-21					
Education Permit ^b	Coghill	223			4.27	1.38	4.50
	Eshamy	225	2.72	5.90			4.44

^a Typically during each fishing period a portion of each delivery to a tender boat is counted into a brail, weighed, and the average weight is computed by dividing the net weight of the brail load by the number of fish. This average weight is used to estimate the number of fish in the total delivery. The average weight in this table is based on the total weight of the catch by species, gear type, and fishery from fish ticket summaries divided by the total number of fish sold by species, gear type, and fishery as reported on fish tickets.

^b Cordova High School educational special permit

^c Harvest is from purse seines.

Appendix H.2. Average lengths and weights for pink salmon from commercial common property and hatchery cost recovery catches, Prince William Sound, 1990.

Date Caught	Sample Size	Harvest	Eastern District		Northern District		Coghill District		Southwestern District	
			Average Length (mm)	Average Weight (kg)	Average Length (mm)	Average Weight (kg)	Average Length (mm)	Average Weight (kg)	Average Length (mm)	Average Weight (kg)
06/26	275	Hatchery Cost Recovery	477	1.15						
06/28	398	Commercial Common Property	461	1.16						
07/02	404	Commercial Common Property	463	1.20						
07/02	309	Commercial Common Property	463	1.22						
07/02	200	Hatchery Cost Recovery	468	1.16						
07/09	195	Commercial Common Property	473	1.28						
07/16	200	Commercial Common Property	472	1.23						
07/23	200	Commercial Common Property	477	1.23						
07/23	200	Commercial Common Property							453	1.13
07/24	200	Hatchery Cost Recovery					448	1.09		
07/24	200	Hatchery Cost Recovery							452	1.12
07/26	200	Commercial Common Property			458	1.20				
07/30	197	Commercial Common Property			462	1.22				
07/30	200	Commercial Common Property							467	1.29
07/31	200	Hatchery Cost Recovery					456	1.21		
08/02	200	Commercial Common Property	467	1.27						
08/03	200	Commercial Common Property					477	1.36		
08/05	200	Hatchery Cost Recovery			470	0.99				
08/06	184	Commercial Common Property	481	1.30						
08/06	200	Commercial Common Property			488	1.44				
08/10	200	Commercial Common Property					489	1.49		
08/10	200	Commercial Common Property							490	1.44
08/13	200	Commercial Common Property					495	1.49		
08/13	200	Commercial Common Property							494	1.49
08/14	200	Hatchery Cost Recovery			493	1.49				
08/19	200	Commercial Common Property					506	1.56		
08/21	200	Hatchery Cost Recovery					501	1.51		
08/27	200	Commercial Common Property							502	1.46

The Alaska Department of Fish and Game administers all programs and activities free from discrimination on the basis of sex, color, race, religion, national origin, age, marital status, pregnancy, parenthood, or disability. For information on alternative formats available for this and other department publications, contact the department ADA Coordinator at (voice) 907-465-4120, or (TDD) 907-465-3646. Any person who believes he or she has been discriminated against should write to: ADF&G, PO Box 25526, Juneau, AK 99802-5526; or O.E.O., U.S Department of the Interior, Washington, DC 20240.